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Report No. 53

Glaciology and Meteorology of Anvers Island: Meteorological Conditions at Palmer Station, Antarctica, 1965-1967

by

Arthur S. Rundle

Institute of Polar Studies

May, 1975

The Ohio State University
Research Foundation
Columbus, Ohio 43212

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GLACIOLOGY AND METEOROLOGY OF ANVERS ISLAND:

METEOROLOGICAL CONDITIONS AT PALMER STATION, ANTARCTICA, 1965 - 1967

Volume 4

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Frontispiece. The meteorological facility at Palmer Station, Anvers Island, Antarctica.

Reports in this Series:

Glaciology and Meteorology of Anvers Island

Vol. 1. Rundle, Arthur S., Ahrnsbrak, William F. and Plummer, Charles C. (1968) Surface Meteorological Data for Palmer Station, Antarctica, February 1 - December 31, 1965: Ohio State University Research Foundation, Preliminary Report on National Science Foundation Grant GA-165 (Project 1885), 374 p.

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PREFACE

This volume constitutes the final report on the surface meteorology program conducted at Palmer Station by Ohio State University scientists between February 1, 1965, and December 31, 1967. It contains a breakdown and condensation of data previously published in two preliminary data reports (Rundle et al., 1968; Rundle and DeWitt, 1968) and of data made available by R. A. Honkala, who directed the field program in 1967. It also contains air temperature data from an ice station at approximately 300 m elevation on the Marr Ice Piedmont. It is essentially a data report.

ACKNOWLEDGMENTS

Thanks are due to W. F. Ahrnsbrak, C. C. Plummer and S. R. DeWitt for their contribution to the field observation program in 1965 and 1966 and assistance in data reduction; to R. A. Honkala who provided data for 1967; to R. Donovan, F. Koutz and Miss Diana Daunt who assisted in the reduction of the chart records; and to the many US Naval personnel who helped support the field program at Palmer Station. The scientific program at Palmer Station was supported by National Science Foundation grants GA-165 and GA-747, awarded to The Ohio State University Research Foundation. Grant GV-32873 was awarded for data reduction and analysis of all field information.

LOCATION

This report pertains to "old" Palmer Station (Elevation 20 m latitude 64° 46' 01" S, longitude 64° 04' 39" W) which is located on Norsel Point, a small rocky peninsula on the north side of Arthur Harbor, Anvers Island (Fig. 1). Waters of the Neumayer Channel, Bismarck Strait and South Pacific Ocean surround the station from south through west to northwest. From northwest through east to south, the station is backed by the Marr Ice Piedmont which rises to 820 m. To the east, at a distance of 24 km, the mountains of Anvers Island rise to 2750 m.

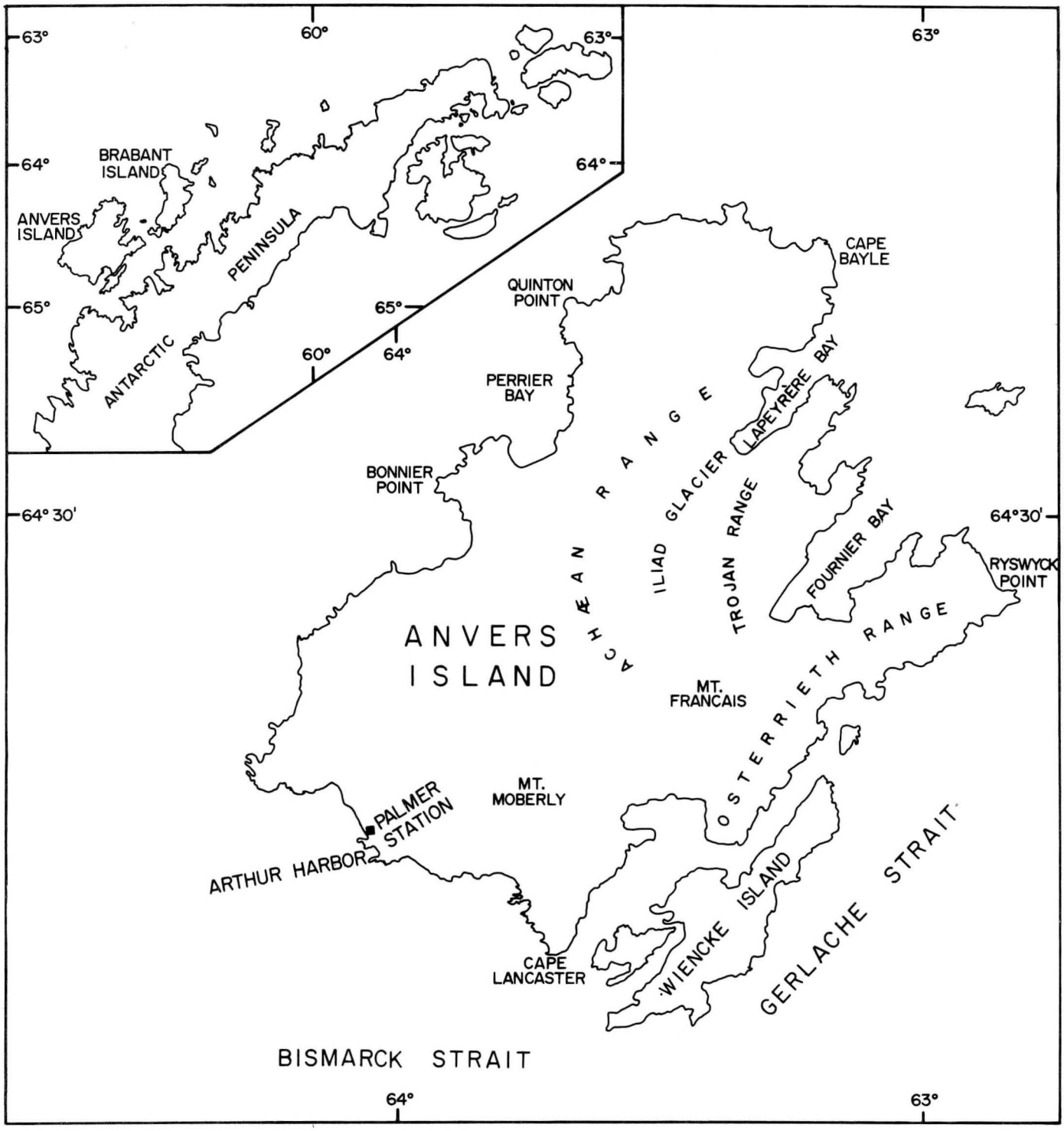

Fig. 1. Location of Palmer Station

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INSTRUMENTATION

Instrument Type	Height	From	To
Maximum Thermometer, Liquid-in-Glass, Wexler, USWB	2 m	2/1/65	12/31/67
Minimum Thermometer, Liquid-in-Glass, Wexler, USWB	2 m	2/1/65	12/31/67
Thermometer, Exposed Spirit, Liquid-in-Glass, Wexler, USWB	2 m	2/1/65	12/31/67
Psychrometer, Liquid-in-Glass, Wexler, USWB	1.25 m	2/1/65	12/31/67
Thermograph, Bendix Friez, 7-Day, USWB	1.75 m	2/1/65	12/31/67
Anemometer, Portable, USN	2.25 m	2/1/65	12/31/67
Wind Recorder, Mechanical, Lambrecht Mod. 1482, 31 Day	10.0 m	2/1/65	12/31/67
Barograph, Bendix Friez, 4-Day, USWB	1.75 m	2/1/65	12/31/67
Barometer, Precision Aneroid, Wallace and Tiernan	1.75 m	2/1/65	12/31/67
Rain Gauge, 8-inch, Nonrecording, USWB	1.0 m	2/1/65	12/31/65
Rain Gauge, 12-inch, Shielded, Automatic-Weighing	3.7 m	1/1/66	12/31/67

TEMPERATURE

Air temperatures at Palmer Station are influenced by several factors which, though they all have some effect on the temperature regime, some are not readily identified and are difficult to correlate, while others are well defined.

The altitude of the sun (time of year) and cloudiness have marked effects on temperatures. The most significant variations in temperature however, result from the progression of low pressure systems which sweep from west to east out of the Bellingshousen and Amundsen Sens bringing winds characterized by sudden changes in wind direction and speed.

The mean temperature for the 35-month period from February 1965 to December 1967 was-3.3°C and while the mean annual temperature for 1965 and 1966 were similar (-3.6°C and -3.8°C respectively), 1967 was warmer with a mean annual value of -2.8°C. This latter value resulted from an extremely mild winter, the effects of which were not offset by a slightly cooler summer. The documentation of sea ice cover in the peninsula area is limited, but the difference in temperature during the 1967 winter may have been the result of a less intense sea ice cover compared with the two previous years.

The occurrence of the coldest and warmest months varied considerably from year to year; August was the coldest month of 1965 with a mean temperature of -10.5°C, but the absolute minimum temperature of -28.1°C was recorded on October 3. The coldest day was July 19, with a mean temperature of -22.8°C. The warmest month of that year was March with a mean temperature of 2.1°C and the absolute maximum on March 8 was 7.9°C. The warmest day of 1965 was February 6 when the mean temperature reached 5.4°C.

Temperature conditions during 1966 were similar but the coldest month was July with a mean temperature of -13.8° C and the absolute minimum of -29.5° C was recorded on July 16. This was also the coldest day of 1966 with a mean of -26.7° C. The warmest month was January with a mean of 1.3° C and January 9 was the warmest day of the year with a mean temperature of 4.9° C. The absolute maximum was 9.0° C on November 22 which was also the absolute maximum temperature recorded during the entire 35-month period.

A very mild winter prevailed in 1967 with September the coldest month with a mean of -6.2°C. The coldest day was September 18 with a mean of -17.8°C and on that day the absolute minimum of -21.1°C was also recorded. December was the warmest month with a mean of 1.3°C and the absolute maximum of 7.2°C was recorded twice, on December 11 and 19. The warmest day was February 6 with a mean temperature of 3.9°C.

Diurnal Temperature Fluctuation

Diurnal temperature fluctuations are shown in the plot of mean daily air temperatures (Fig. 2). There is a pronounced seasonal pattern with a markedly lower range of diurnal fluctuation occurring during the summer months. During winter, day-to-day temperature fluctuations over a range of 8 to 10 degrees are common and are occasionally recorded over a range of 12 to 14 degrees. In any winter month between June and September the difference between the lowest and the highest mean daily air temperature can exceed 25°C, while in summer, from December to March, it is only one or two degrees.

The wider range of daily temperatures in winter can best be ascribed to the passage of low pressure systems which cause relatively warm northerly air to flow into the central peninsula region. According to Burdecki (1957) diurnal temperature fluctuations are greatest in September because the border of the sea ice rapidly shifts south and because of increasing solar insolation, though the observations from Palmer Station do not offer strong support for this suggestion.

Throughout the peninsula the most regular temperature distribution occurs during the summer months when, according to Burdecki (1957), the modal temperature very nearly coincides with the mean temperature and the standard deviation of temperature is remarkably small. The low value of standard deviation was ascribed by Burdecki (1957) primarily to the fact that in summer the mean temperature lies very near to the melting point of ice and that the latent heat of ice formation has the effect of counteracting any tendency for the temperature to depart appreciably from 0°C. During the austral summer diurnal fluctuations are frequently only one or two degrees and rarely as much as ten degrees (O. Orheim, personal communication, Deception Island; Burdecki 1957; Rundle et al., 1968; Rundle and DeWitt, 1968).

Annual Temperature Variation

The annual temperature variation at Palmer Station is shown in the plot of mean monthly air temperature (Fig. 3a). Generally, the curve shows a clear and simple pattern of seasonal variation. The prominent reversal in the temperature trend in September 1965 is associated with the general storminess of that month but it cannot be related to a single meteorological parameter alone. The mean wind speed in September was 12.9 knots (6.6 m/sec) while that for October was 10.0 knots (5.1 m/sec); but the mean temperature for October does not appear to be anomalous. Wind direction is also significant. Over 47 percent of the wind in September was from the north to northeast and was associated with relatively high temperatures; the mean temperature of the north wind, which accounted for 13.5 percent of the total, was 1.0°C.

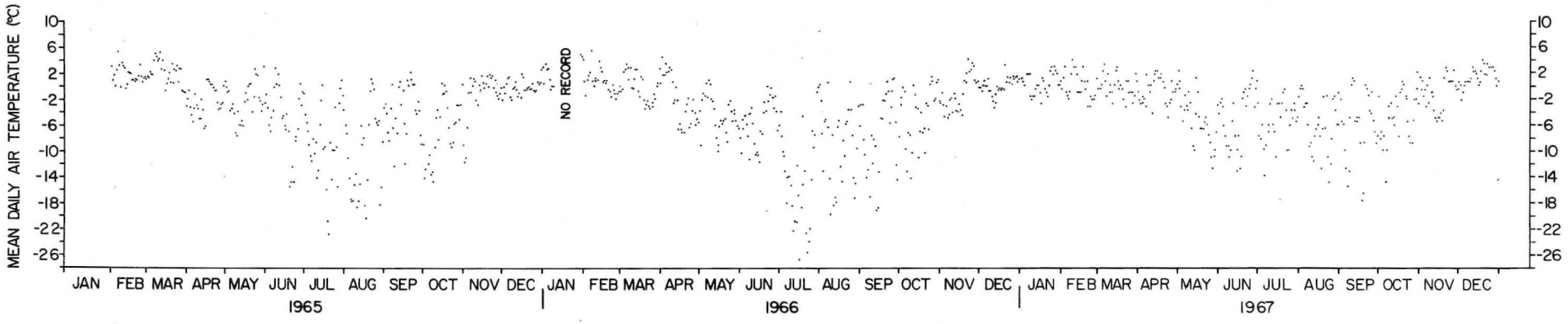

Fig. 2. Mean daily air temperature

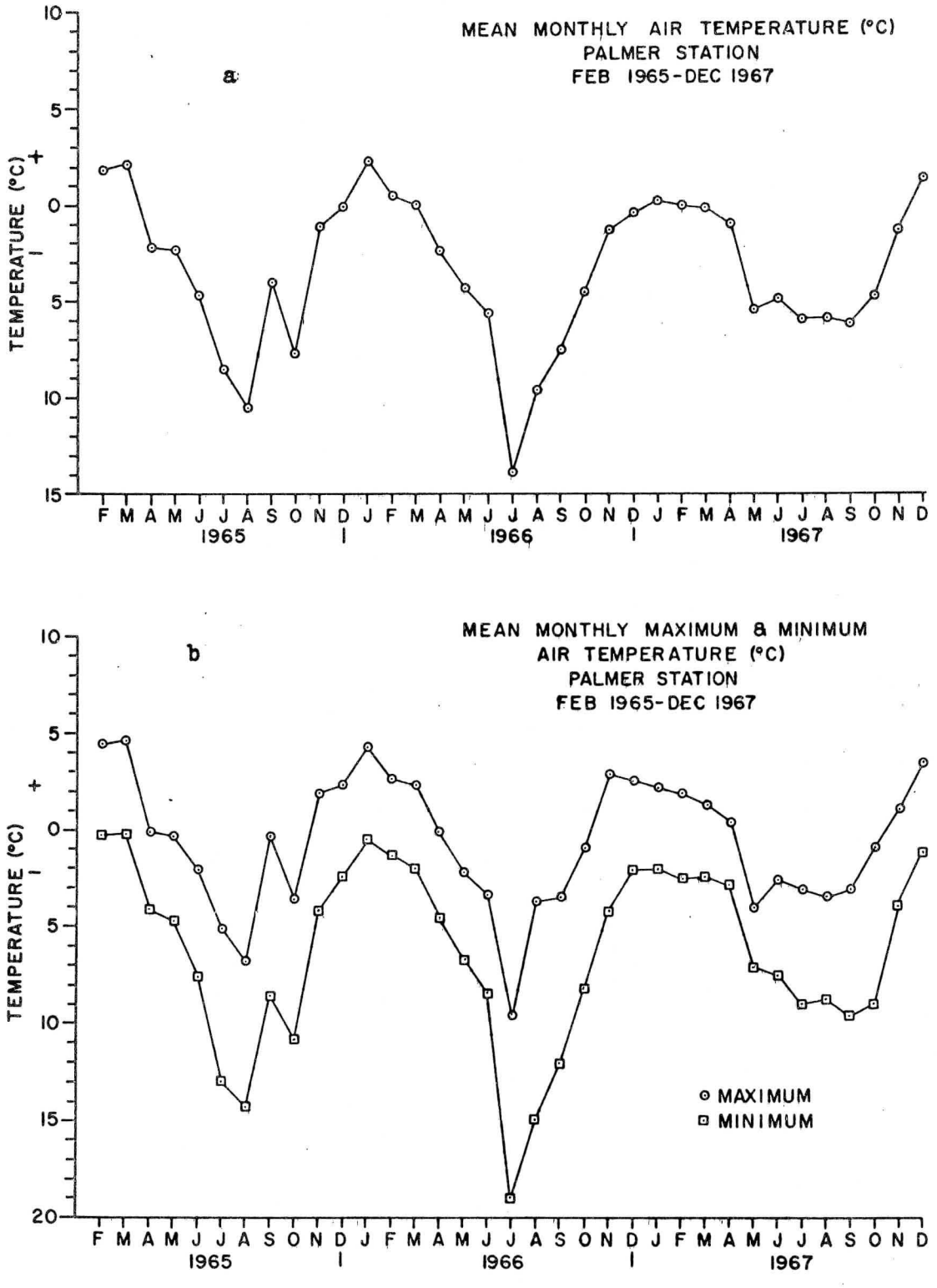

Fig. 3. (a) Mean monthly air temperature; (b) Mean monthly maximum and minimum air temperature

The low mean temperature in July 1966 is exceptional in this record and is accountable by the relatively high percentage (12%) of winds from the south-southeast through south-southwest, bringing cold air with a mean temperature of -22°C.

When compared with the two previous years, 1967 experienced a slightly cooler summer which can be related to a greater prevalence of winds from the southern quadrants and a paucity of winds from the northern quadrants. The extremely mild winter of 1967 may be attributable simply to the reversal of these wind conditions during the winter but southerly winds were no less prominent during that winter than during the previous years, suggesting that widespread temperature conditions in the peninsula area were milder and that the climate throughout the year was more maritime, perhaps the result of a relatively less intense sea ice cover. The curves of the mean maximum and minimum temperatures (Fig. 3b) emphasize the difference in temperature regime during the three years and indicate that the mildness of the 1967 winter was more the result of higher minimum temperatures than of higher maximum temperatures, again suggesting a diminished degree of continentality in 1967. The intensity of the 1967 winter was only 50 to 75 percent that of the two previous years.

Temperature Conditions on the Marr Ice Piedmont

A remote meteorological facility was established on the piedmont on April 5, 1965 at an elevation of 300 m (approx. 1000 feet). It had previously been set up at 600 m elevation (approx. 2000 feet) in February, but because of difficulty in properly servicing the instruments at that elevation, the facility had to be moved. No reliable data were obtained from the higher elevation.

Temperature data obtained from the 300 m elevation are summarized below. Throughout the period of investigation, the mean monthly air temperature never exceeded, or reached, 0°C.

Direct comparison of the remote temperature data with those from Palmer Station is not possible, because the remote record is not as complete as that from the main station. For comparative use (Table I), the Palmer Station record has been adjusted so that the only values considered are for days when remote values also are available. Therefore, the main station values in Table I differ slightly from those tabulated in the Appendix.

On the basis of 12 months data (for 1966 only) the lapse rate is approximately 0.75°C per 100 meter elevation increase, while on the basis of 9 months data (3 years), the rate is 1.0°C per 100 m. These values approximate tha accepted "normal" values.

MEAN MONTHLY AIR TEMPERATURE (°C)
(300 m Elevation)

1965

JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
-	-	-	-4.8	-5.6	-8.6	-11.8	-15.1	-6.9	-10.9	-3.2	-3.3

Mean (9 Mo): -7.8

1966

JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
-1.4	-2.1	-3.0	-4.6	-7.4	-8.1	-16.7	-9.6	-8.6	-6.2	-3.1	-1.7

Mean (12 Mo): -6.0
Mean (9 Mo): -7.3

1967

JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
-	-	-	-5.2	-10.7	-10.7	-9.1	-10.3	-10.2	-7.4	-4.3	-0.7

Mean (9 Mo): -7.6

TABLE I

MEAN MONTHLY AIR TEMPERATURE
PALMER AND REMOTE STATIONS

Adjusted for Number of Days
(°C)

	1965			1966			1967		
	Palmer	Remote	Diff	Palmer	Remote	Diff	Palmer	Remote	Diff
JAN				1.5	- 1.4	2.9			
FEB				0.3	- 2.1	2.4			
MAR				0.0	- 3.0	3.0			
APR	- 2.0	- 4.8	2.8	- 2.3	- 4.6	2.3	- 1.0	- 5.2	4.2
MAY	- 2.5	- 5.6	3.1	- 4.3	- 7.4	3.1	- 5.4	-10.7	5.3
JUN	- 5.5	- 8.6	3.1	- 6.0	- 8.1	2.1	- 6.4	-10.7	4.3
JUL	- 8.5	-11.8	3.3	-13.8	-16.7	2.9	- 5.0	- 9.1	4.1
AUG	-11.7	-15.1	3.4	- 7.5	- 9.6	2.1	- 4.9	-10.3	5.4
SEP	- 3.6	- 6.9	3.3	- 7.4	- 8.6	1.2	- 6.8	-10.2	3.4
OCT	- 8.1	-10.9	2.8	- 4.5	- 6.2	1.7	- 4.9	- 7.4	2.5
NOV	- 1.5	- 3.2	1.7	- 1.3	- 3.1	1.8	- 1.3	- 4.3	3.0
DEC	- 0.1	- 3.3	3.4	0.4	- 1.7	2.1	1.4	- 0.7	2.1
MEAN	- 4.8	- 7.8	3.0	- 5.2	- 7.3	2.1	- 3.8	- 7.6	3.8

1965	1966	1967	
-7.8	-7.3	-7.6	Remote (9 months) Mean
-4.8	-5.2	-3.8	Palmer (9 months) Mean
3.0	2.1	3.8	Difference; 9 months
	-6.0		Remote (12 months) Mean
	-3.7		Palmer (12 months) Mean
	2.3		Difference: 12 months

Average Difference (9 months) 3.0 °C = 1.0 °C/100 m
Average Difference (12 months) 2.3 °C ≈ 0.75°C/100 m

Temperature and Wind Direction

On the basis of the 35-month record of daily mean temperature and mean wind direction, the relationship between temperature and direction is well defined. The individual annual records however, indicate variations which are probably related to widespread geoclimatic factors. The mean temperature for each wind direction is given below.

MEAN TEMPERATURE (°C) AND WIND DIRECTION
AT PAIMER STATION, 1965 to 1967

	DIR	N	NNE	NE	ENE	E	ESE	SE	SSE
TEMP	1965	-1.8	-2.5	-2.0	-2.3	-4.4	-3.4	-5.1	-3.0
	1966	-4.1	-3.9	-3.8	-7.2	-3.1	-4.0	-5.6	-4.0
	1967	-1.8		-5.1		-4.3		-2.7	
MEAN		-2.6	-3.2	-3.6	-4.4	-3.9	-3.7	-4.5	-3.5

	DIR	S	SSW	SW	WSW	W	WNW	NW	NNW
TEMP	1965	-5.3	-2.5	-2.1	-4.3	-3.4	-2.4	-2.6	-2.4
	1966	-4.7	-7.6	-4.5	-3.6	-4.0	-5.2	-4.1	-4.3
	1967	-3.9		-4.6		-5.3		-3.1	
MEAN		-4.6	-7.0	-3.7	-3.9	-4.2	-3.8	-3.3	-3.6

Generally, the lowest temperatures were recorded when the wind was from the southeast through southwest, though in 1967 the west and northeast winds were the coldest. The cold northeast wind during that year may have resulted simply from cold air being brought across the peninsula from the Larsen Ice Shelf and the Weddell Sea but the cold west wind is difficult to understand unless it was related to heavy pack ice concentrations in the Amundsen and northern Bellingshousen Seas. The climatic contenentality of 1966 is reflected by the markedly lower temperatures for all winds with only 3.6°C separating the coldest wind from the warmest.

These southerly winds are best defined as "semi-continental" in that they transport cold air from the Antarctic mainland and the pack-ice concentrations of the Bellingshausen Sea. In contrast, the northerly winds are "maritime", are usually associated with severe storm conditions and are significantly warmer than the southerly winds. Thus, the basic relationship between temperature and wind direction is geographic - maritime versus continental - with the extreme low temperatures occurring with southerly (continental) winds and the extreme highs with the northerly (maritime) winds.

Temperature and Wind Speed

Only to a degree is there a relationship between temperature and wind speed and this is marked only in the winter months when prevailing low temperatures, with associated low wind speeds, are increased with the onset of northerly, high-speed storm winds. It is therefore, more a function of the wind direction than the wind speed that the temperature increases, though as a generalization, low temperatures, particularly in winter, are not associated with high wind speed.

Temperature and Storm Conditions

The climate of Anvers Island and the Antarctic Peninsula as a whole is characterized by an almost continual progression of cyclonic storms. Only in the height of summer, during January and February, does this general storminess abate. Cyclonic storms over Anvers Island are generally of short duration and though violent, are much less so than in other parts of Antarctica and the Antarctic Peninsula. They originate in the Amundsen and Bellingshausen Seas to the west and follow an easterly and southeasterly track across the peninsula and weaken and dissipate over the Weddell Sea. Abrupt changes in temperature are associated with storm conditions and the interaction of the various meteorological parameters is strongly evident.

A typical storm occurred in mid-August 1965 when, on August 17, extremely low temperatures prevailed under dead calm conditions and clear sky (Fig. 4). Atmospheric pressure was steadily increasing from a previous low. An initial temperature increase of 10°C in 15 hours resulted from a gradual cloud buildup and fogginess, with associated light snowfall, reflecting the approach of the warm storm front. A further temperature increase of 3.6°C in two hours was associated with a light wind of 2.1 m/sec (4.0 knots) from the north-northwest. Temperature then again decreased under partially clearing sky. During this period winds were light and variable at about 1.0 m/sec (2.0 kts) but were turbulent, with no definite, sustained direction; such being typical of pre-storm conditions at Palmer Station. Meanwhile, air temperature showed a normal diurnal variation with the maximum at 10 am and 11 am (local time, August 18).

A sudden and violent fall in pressure resulted in the onset of wind which accelerated from less than 1.0 m/sec to 25.7 m/sec (50 knots) in five hours. This was initially from the east but swung rapidly to the north-northeast. This was the maritime wind and caused a temperature increase of 22°C in 12 hours, with the largest hourly element of 4.5°C. The temperature continued to increase with decreasing wind speed, but with direction sustained in the north-northeast. Temperatures did not fall untill the wind shifted to the west and southwest. Wind-shift back to the north-northwest to north-northeast restored and maintained the high temperature, which did not decrease again until the wind moved through the east and south to southwest and decreased in speed.

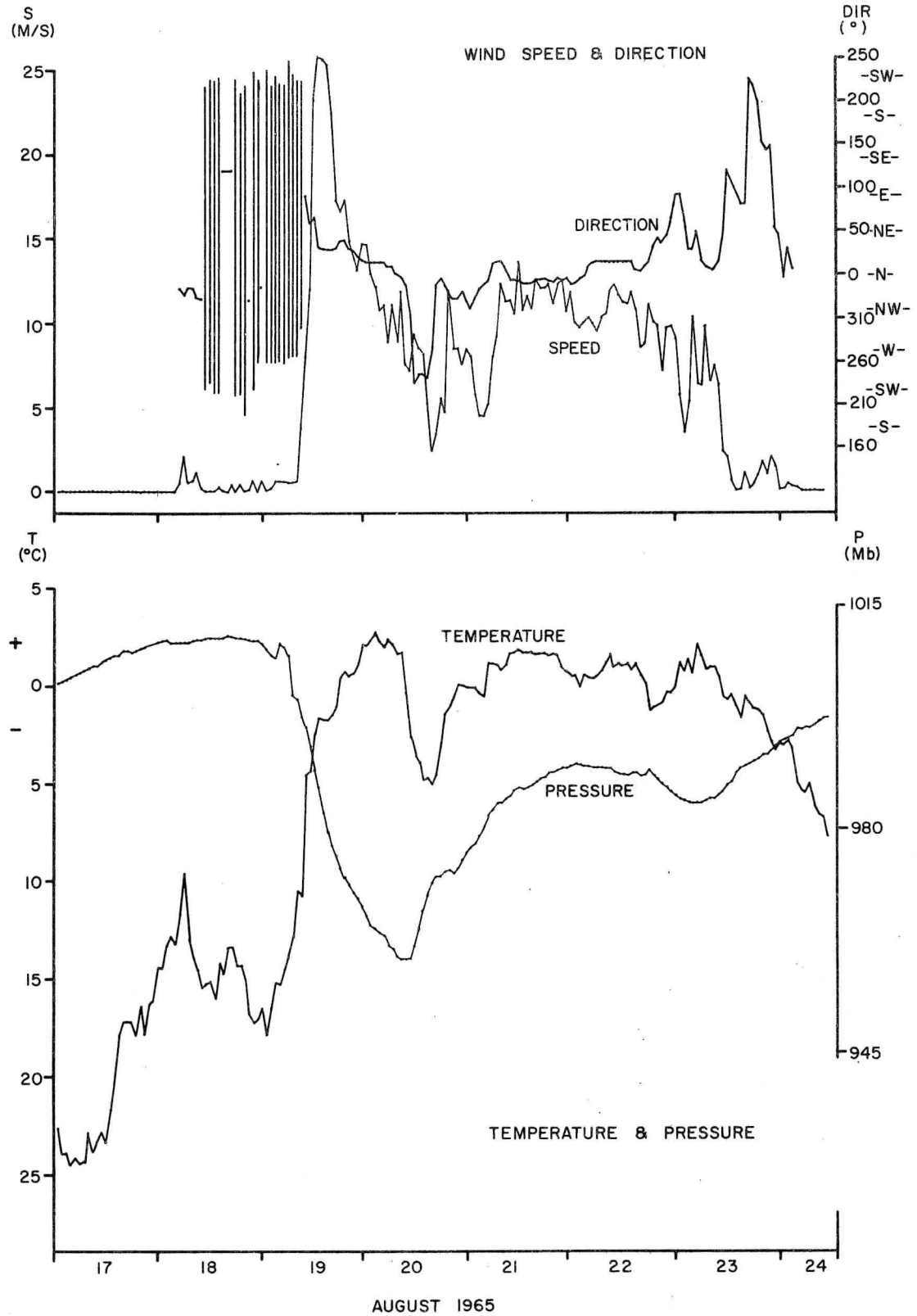

Fig. 4. Anatomy of cyclonic storm of mid-August 1965

The elements of this storm indicate a close relationship between air temperature and wind direction and an incidental, though less pronounced, correlation between temperature and wind speed. Wind itself however, is not a temperature governing factor, while direction is, irrespective of wind speed.

ATMOSPHERIC PRESSURE

The plot of mean daily atmospheric pressure (Fig. 5) and mean monthly atmospheric pressure (Fig. 6) indicate that there is no systematic seasonal pattern in the occurrence-distribution of pressure at Palmer Station. Only a loose generalization holds: that relatively lower pressure might be expected in March or April and between September and November, and that high pressures are more likely to occur between June and August and again in January or February.

Distinct seasonal patterns of pressure distribution have been reported from other areas of the Antarctic (for example, Hofmeyr 1957; McDowall 1960; Cameron 1963) with the form of the periodic cycle being dependent on latitudinal position relative to the deep circumpolar pressure trough at approximately 64°S latitude, which separates the high pressure systems of temperature latitudes and the well defined polar anticyclone (Hofmeyr 1957).

North of the trough a clearly defined patter of annual pressure distribution exists with higher pressure being recorded about June and November and the lower pressures about March and September. South of the trough the reverse is true, with the highs around March and August to September and the lows in June and December. Thus, the virtual lack of systematic pressure distribution at Palmer Station can best be related to the fact that Palmer Stations lies within the trough, across which all relationships and correlations are poor (Hofmeyr 1957).

The average pressure at Palmer Station during the 35-month period was 987.7 mb with only fractional variation from one year to the next; in 1965 the average pressure was 986.4 mb; in 1966, 988.9 mb; and in 1967, 987.6 mb. The slightly higher pressure of 1966 again reflects a more continental character to the climate in that year compared with the other two. The extreme maximum pressure was 1022.9 mb recorded on August 25, 1967, and was associated with sustained periods of clear sky, relatively low temperatures and very light winds. The extreme minimum pressure of 939.7 mb was associated with the latter part of a violent storm and was recorded on September 4, 1966.

As a generalization only, months with low pressure were months with high winds and months with high pressure were months with low winds and sustained calms (Fig. 6).

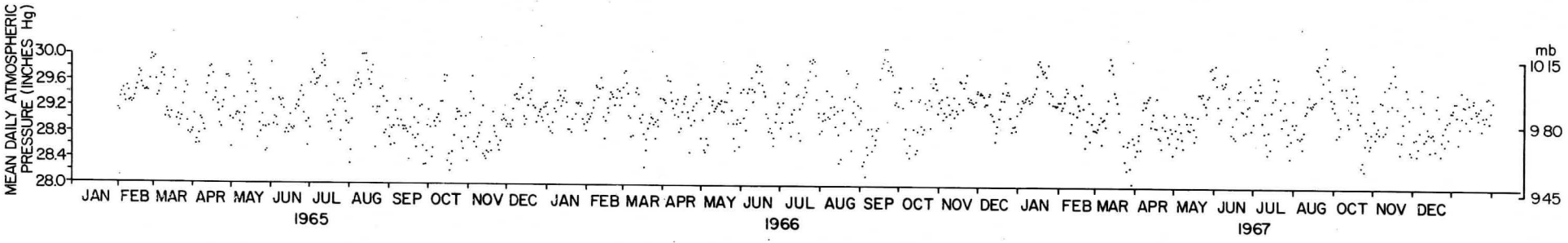

Fig. 5. Mean daily atmospheric pressure

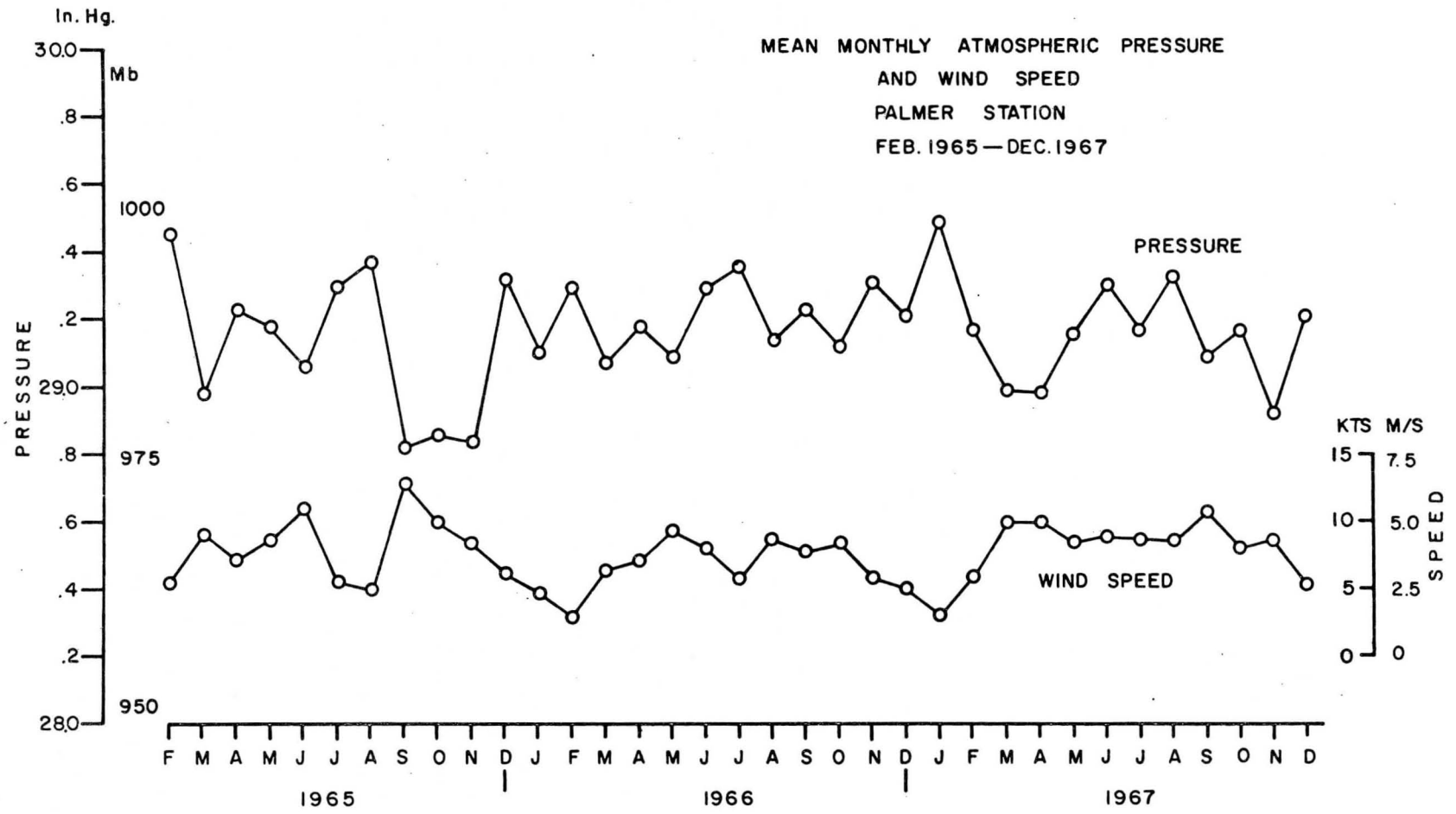

Fig. 6. Mean monthly atmospheric pressure and wind speed

WIND

Winds at Palmer Station are generally light but persistant with a marked decrease in frequency of occurrence with increase in velocity class (Fig. 7). They are variable in direction but predominently northerly. High winds from the north-northwest through north-northeast are associated with cyclonic storms, while lighter winds occur from all directions. Rarely are high winds recorded from the southern quadrants.

The mean wind speed for the 35-month period was 3.85 m/sec (7.5 knots) and 1967 had the highest mean annual wind speed of 4.1 m/sec (8.0 knots). The mean for 1966 was 3.45 m/sec (6.7 knots) and that for 1965 was 4.05 m/sec (7.9 knots). The percentage calm in 1965 was 19.4, and in 1966, 11.4, giving an average calm for the 23-month period of 15.4 percent. Data on calm are not included in the available 1967 record.

The mean monthly wind speed (Fig. 6) ranged from 1.5 m/sec (3.0 knots) in February 1966 to 6.65 m/sec (12.9 knots) in September 1965. The highest hourly wind speed was 25.75 m/sec (50.1 knots), recorded on August 19, 1965. Peak gust data is not available due to the method of recording but it is unlikely that the strongest gusts reached 40 m/sec (approximately 75 knots).

The mean monthly wind speed data show a general tendency toward lighter winds in summer and high winds during the winter months with peak values around September. This trend is typical of Antarctic coastal stations, caused in part by the influx of summer maritime air which prevents anticyclonic winds from reaching the coastline. At Palmer Station, the trend is enhanced by the summer decrease in cyclonic storm activity. The peak values around September can best be ascribed to the shifting boundary of regional sea ice, increasing solar insolation and an intensification of storm activity.

From Burdecki's (1957) summary of wind conditions throughout the Antarctic Peninsula, Palmer Station and vicinity emerge as typical of the central and southern parts with no pronounced anomalies. Wind speeds to the north, generally from Deception Island northward, however, exceed those at Palmer Station by 100 percent and more and probably result from a higher incidence of storm condition caused by more frequent variations in winter pack ice conditions and closer proximity to the prevailing westerly atmospheric circulation.

Wind Direction - Frequency and Speed

The percentage frequency of the different wind directions and mean wind speed for each month of 1965 and 1966 are given in the Appendix and are shown as wind roses in Figure 8. From the data available, a detailed discussion of wind direction and speed in 1967 is not possible. The average annual elements of direction and speed for 1965 and 1966 are summarized below.

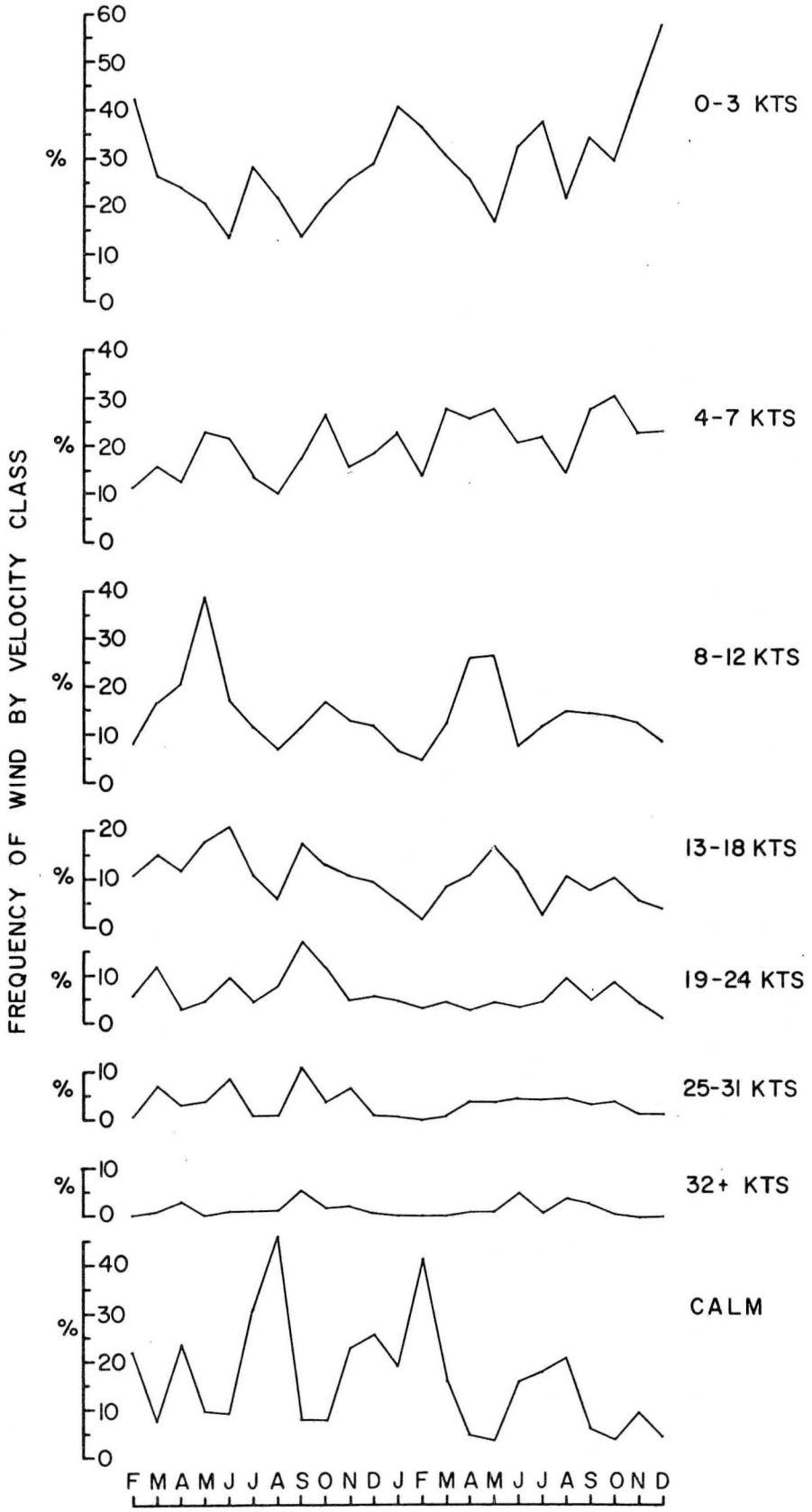

Fig. 7. Frequency-occurrence of wind by velocity class

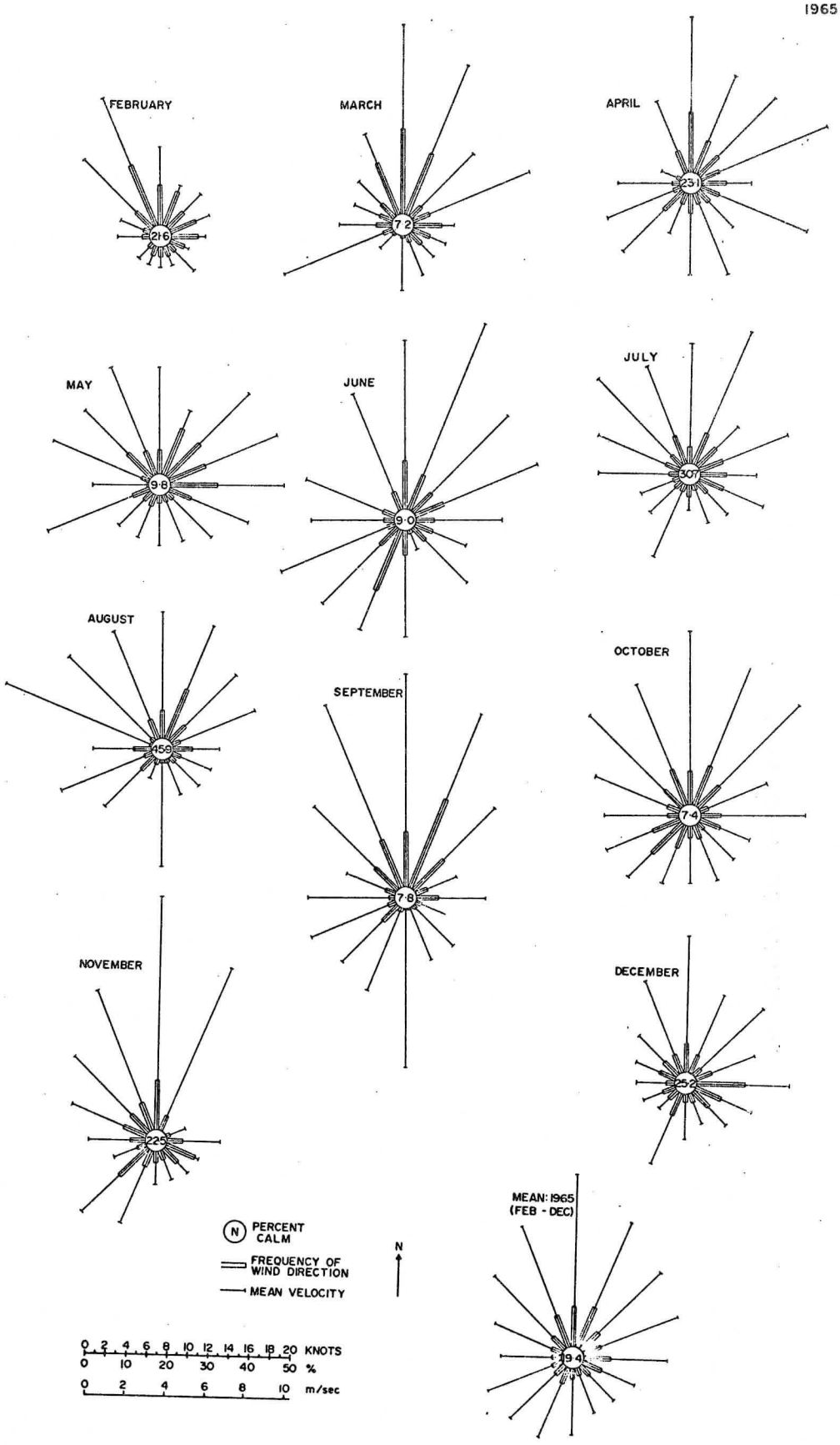

Fig. 8. Wind roses: 1965

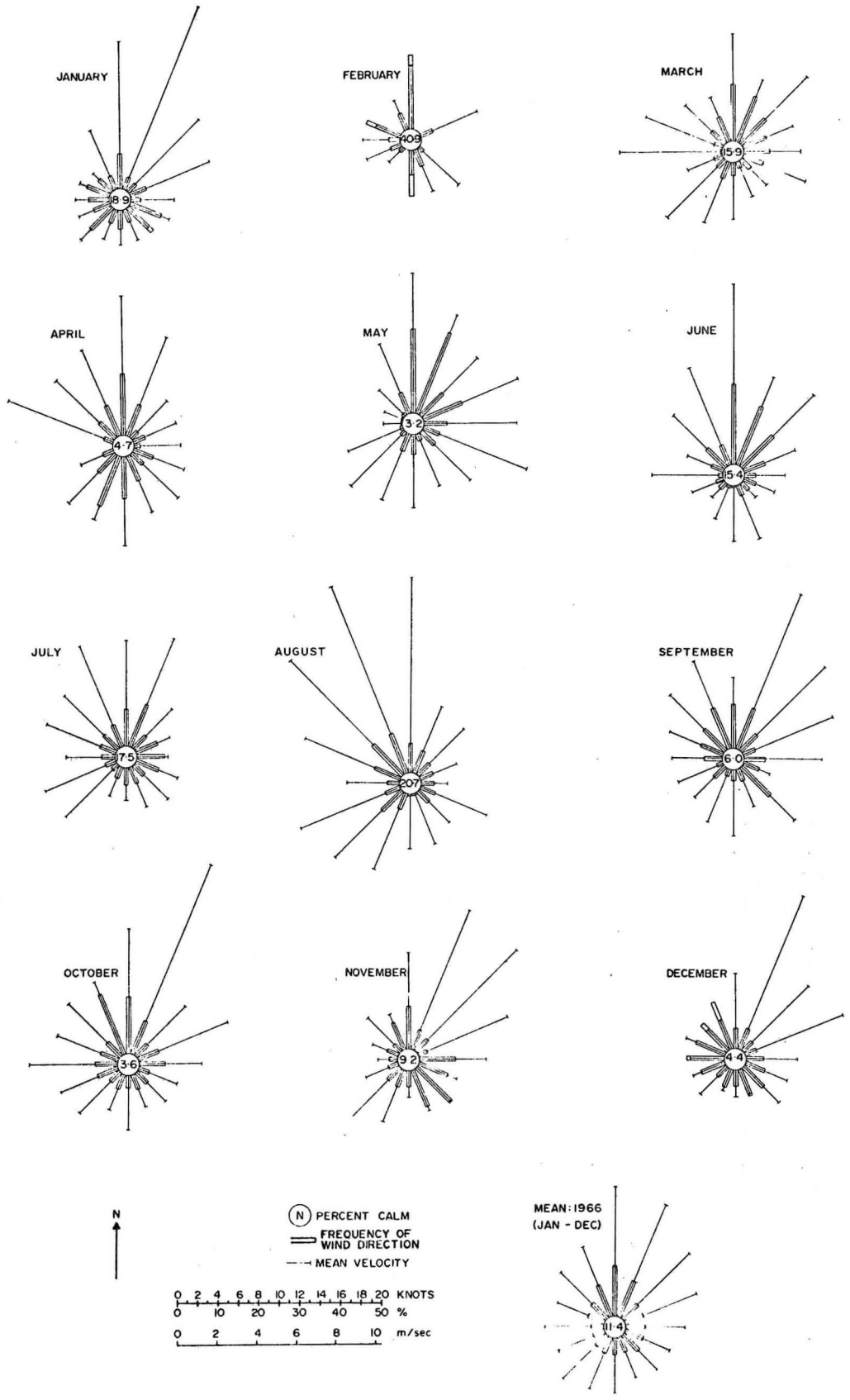

Fig. 8. Wind roses: 1966

AVERAGE FREQUENCY (%) AND MEAN WIND SPEED (m/sec)
AT PALMER STATION, 1965 - 1966

DIR	N	NNE	NE	ENE	E	ESE	SE	SSE
FREQ	11.0	10.0	5.6	4.8	5.7	4.9	4.4	3.0
SPEED	7.5	6.4	5.1	4.4	3.5	2.6	2.4	2.3

DIR	S	SSW	SW	WSW	W	WNW	NW	NNW
FREQ	3.3	4.3	4.3	3.0	2.8	3.7	4.8	9.9
SPEED	3.0	3.3	3.4	3.2	2.8	3.1	4.1	5.0

Though there were some variations in the prevailing wind direction from one month to another, the prevalence of wind from the northern quadrants, and specifically from the north-northwest through north-northeast, is strongly evident from Figure 8. Notable exceptions are June 1965, when the prevailing direction was south-southwest, and November 1966, when it was southeast. In both these months however, winds from the northeast quadrant were more significant.

The significance of the various wind directions in terms of frequency and speed is shown as vectors in Figure 9. These are the product of the frequency and mean speed and are one expression of the total wind from each direction. These data de-emphasize the isolated occurrence of high mean wind speed from some directions (for example, the mean south wind speed of 7.9 m/sec (15.5 knots) in September 1965, resulted from one occurrence only) but do not suppress the occurrence of sustained direction, for example, the south-southwest wind in June 1965 and the south and south-southwest winds in April 1966 which were of significant proportion. However, the occurrence of these southerly winds is exceptional in this record and the prevailing winds, both in direction and strength, were from the northern quadrants. In 1965 the prevailing direction was marginally north-northeast over due north but the strongest wind was from due north. In 1966 the prevailing wind, both in strength and direction, was north.

These data point to a very marked relationship between wind direction and speed with the highest velocity classes between northwest through northeast but with the greatest frequency of high velocity classes in the north and north-northeast. This distribution is a direct reflection of the cyclonic character of the climate and the dominant effect of storm conditions on the overall wind structure over Anvers Island.

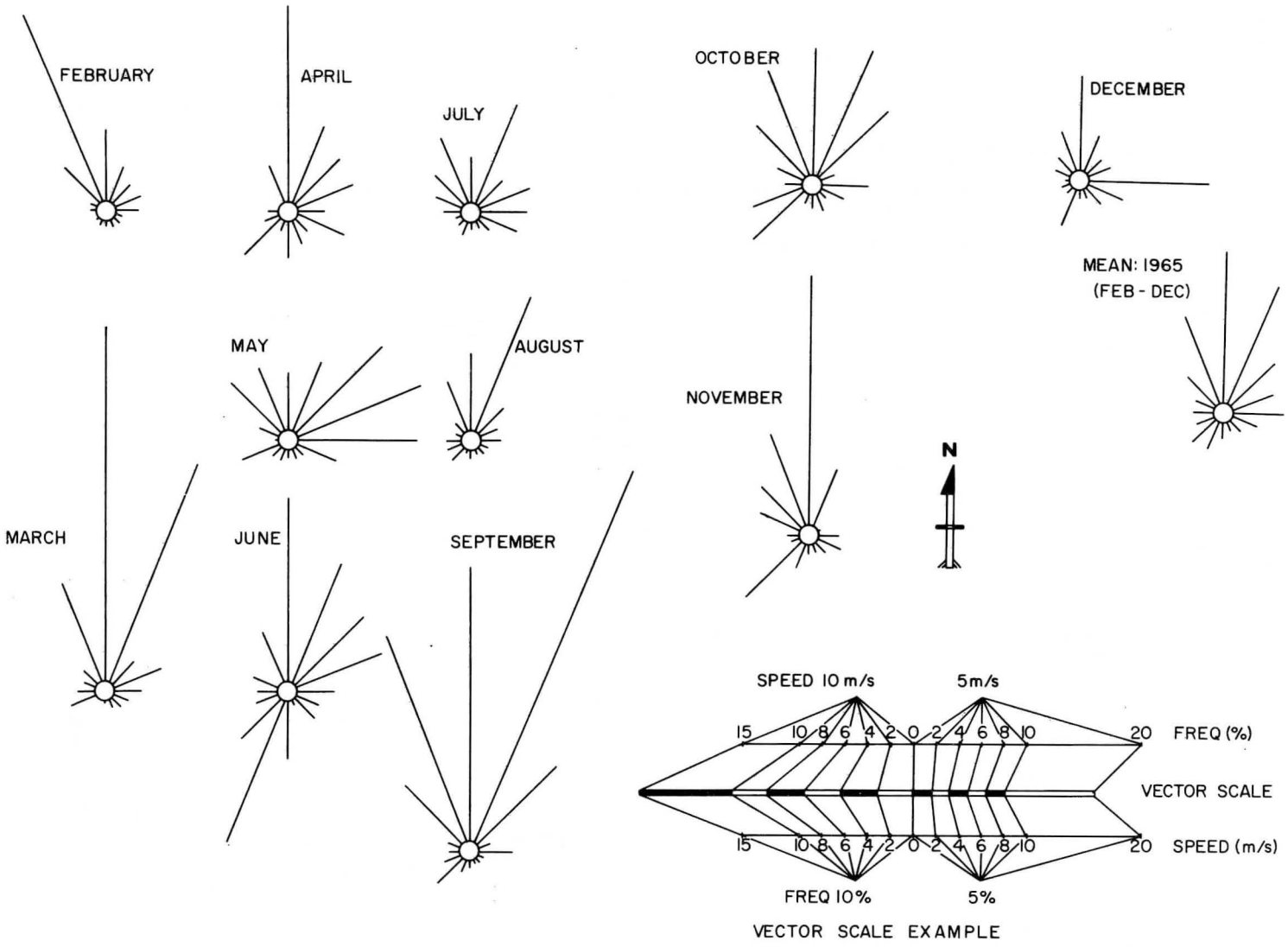

Fig. 9. Wind vectors: 1965

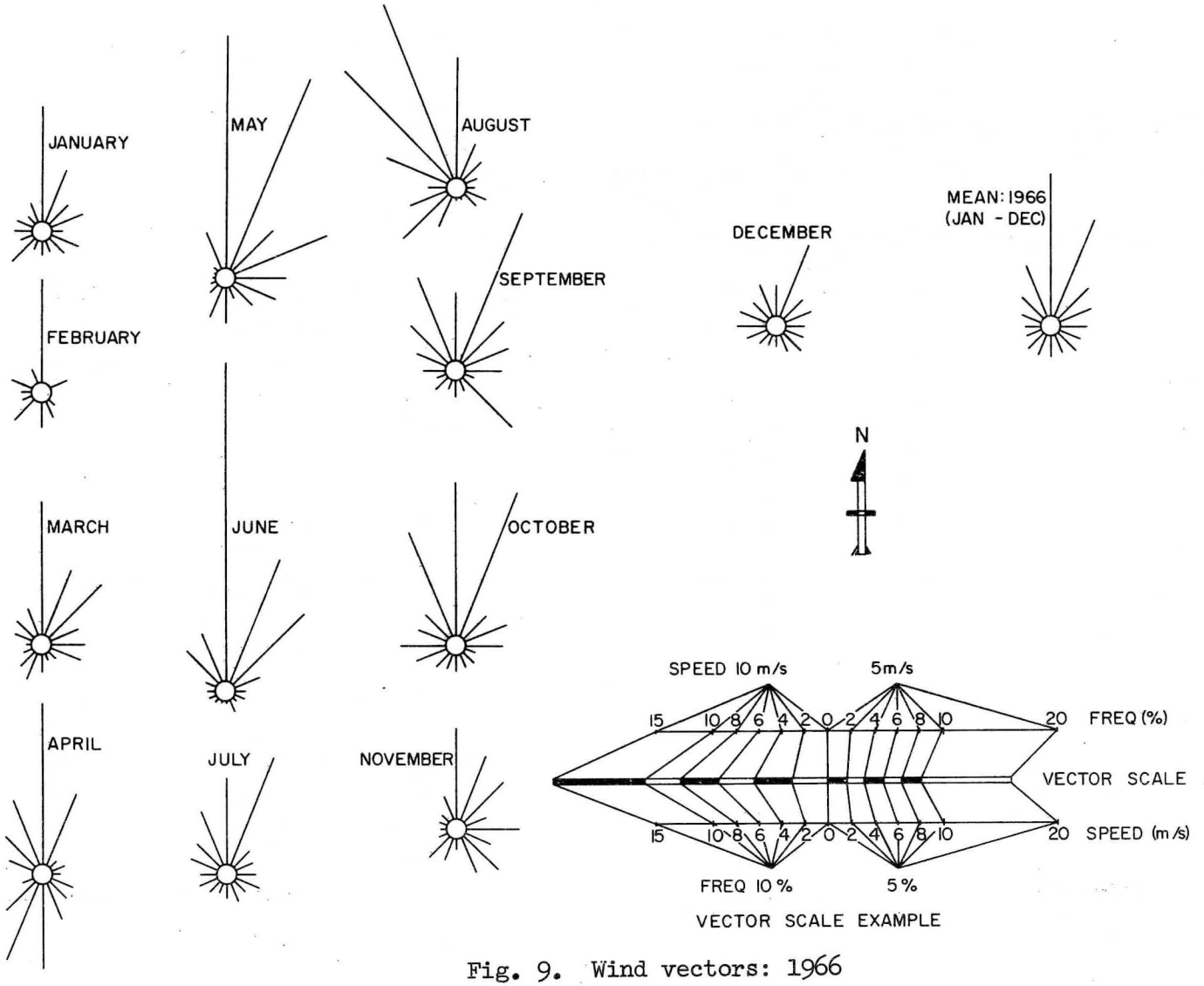

Fig. 9. Wind vectors: 1966

PRECIPITATION AND CLOUD COVER

Precipitation at Palmer Station

The record of precipitation obtained from Palmer Station is of doubtful value because of the maifest problems of measuring solid precipitation but the record indicates that precipitation is high and ranks with the highest in the Antarctic Peninsula. It occurs in all months but with the lowest values in the summer months when it occurs frequently as rain and sleet. Snow is the principal form of winter precipitation but rain and sleet, and one occurrence of hail, in August 1966, have been recorded in several winter months.

During 1965 (11 months) precipitation at Palmer Station was recorded as 57.1 cm water; in 1966, 30.1 cm; and in 1967, 30.5 cm (for 10 months only; data for January and February are not available). The discrepancy in the 1965 value results from the fact that precipitation in that year was obtained from snow stake measurements and density determinations, because of the totatl inadequacy of the precipitation gauge. In the following years the record was obtained from a more sophisticated, though still inadequate, gauge which recorded perhaps 50 percent of the actual precipitation. The 1965 value therefore, is regarded as being more representative of conditions at Palmer Station.

Of the 1,005 days for which the record is available, precipitation in some form occurred on 633 days or 59.5 percent of the time. The 1965 record is 334 days long with precipitation on 202 days (60.5%). In 1966 and 1967 the length of the record was 345 days and 306 days respective; precipitation occurred on 188 days (54.5%) in 1966 and on 243 days (79.4%) in 1967.

Precipitation on the Marr Ice Piedmont

Snow accumulation over much of the southern part of the Marr Ice Piedmont was recorded between February 1965 and December 1967. Change of surface level relative to wooden poles set in the surface was measured periodically. The record of snowfall was then converted to water equivalent by applying the measured snow density values. Such measurements, because they include such effects as drifted snow, evaporation and sublimation, are not precisely accurate in terms of precipitation but may be regarded as a fair indication of the magnitude of precipitation on the piedmont. The results of these measurements have been dealt with in detail by Rundle (1970) and Rundle (1973).

Figure 10 shows the change in surface level at selected elevations between 100 and 750 meters a.s.l. There is a pronounced increase in the rate of snow accumulation with elevation increase and in terms of water

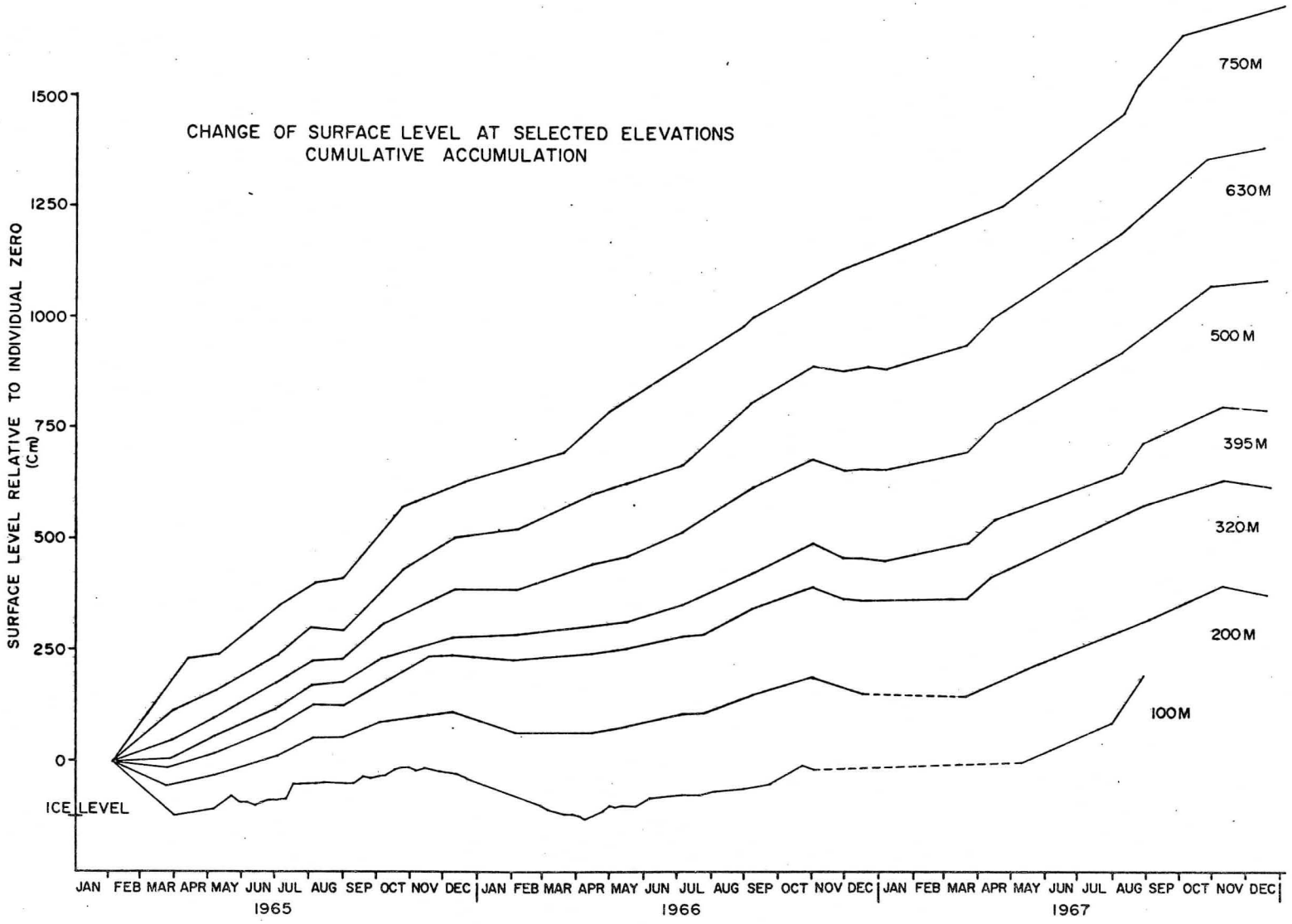

Fig. 10. Change of surface level at selected elevation

equivalent, average annual accumulation for the 3-year period was approximately: 65 cm (200 m elevation); 90 cm (300 m); 125 cm (400 m); 165 cm (500 m); 200 cm (625 m); 260 cm (750 m).

Cloud Cover

Only daylight observations of cloud cover were possible and in 1965 and 1966, sky cover was recorded in tenths. In 1967 sky cover was reported only as clear, part cloudy or obscured.

A total of 1,592 observations were recorded in 1965. The average cover during the year was 7.89/10. The least average monthly cover was 4.36/10 in August but is based on only 80 observations. With a full complement of observations, the average sky cover in August would have computed to be much less as most of that month was clear. However, that month was exceptional. The greatest monthly average cover was 9.29/10 in November. The sky was clear with unlimited visibility on only 8.7% of the observations and was totally obscured on 63.8% of the observations.

In 1966 a total of 1,774 observations were made and the average cover for the year was 8.23/10. The smallest monthly average cover was 7.20/10 in February but as this was computed from only a small number of observations, the 7.83/10 sky cover in May is considered as more representative of the lowest monthly average. The maximum monthly average was 9.10/10 in October. The sky was clear on 5.1% of the observations and totally obscured on 68.8 percent.

Figure 11 is a graphical summary of cloud cover and precipitation occurrence at Palmer Station between February 1, 1965 and December 31, 1967. For 1967 the reports of part cloudy have been arbitrarily plotted as 5.0/10.

CLIMATE CLASSIFICATION

According to Köppen's (1936) system of classification, areas in which the average temperature of the warmest month is above 0°C but below 10°C are classified as Tundra Climate (ET). At Palmer Station the average temperature of the warmest month ranged from 1.3°C in December 1967 to 2.3°C in January 1966. On this basis, the climate of Palmer Station and immediate vicinity is Tundra.

Directly from the remote temperature record, and considering the identified local adiabatic lapse rate, the climate of the ice piedmont is classified as Perpetral Frost (EF), in which the mean monthly air temperature of all months is belwo 0°C.

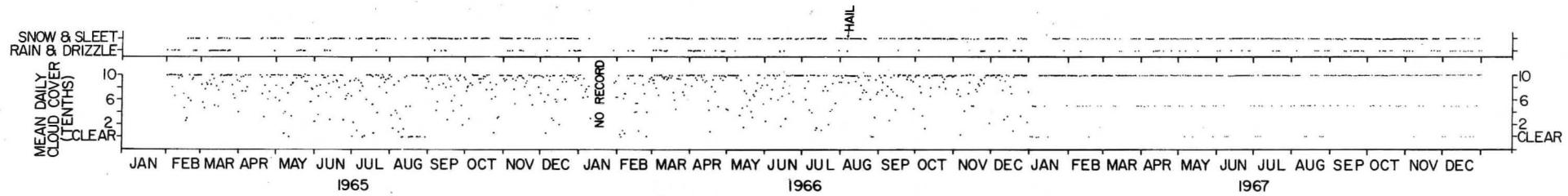

Fig. 11. Mean daily cloud cover and daily occurrence of precipitation

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APPENDIX I

THE METEOROLOGY PROGRAM

Normally, direct observations of dry- and wet-bulb temperature, station pressure and description of cloud cover, sky condition and current weather were made at 3-hour intervals from 1200 GMT through 0300 GMT. Because the meteorological program was subordinate to a glaciological program, it was occasionally necessary to place total reliance on the automatic-recording instruments. As far as possible, the thermograph was corrected daily against the dry-bulb therometer and the barograph was corrected daily against the barometer. Maximum and minimum thermometers were read at 1200 and 0000 GMT (0700 and 1900 local time).

Accuracy of Instrumentation

The barograph has an inherent error of ± 0.02 inch Hg and was calibrated to 0.02 inch Hg. It could be interpolated to ± 0.001 inch Hg with a probable reading accuracy of ± 0.005 inch Hg. Perhaps the most significant error in reading the barograms can be attributed to slack in the clockwork drive mechanism, which at times caused an error of ± 20 minutes. During a steep rise or fall in pressure, such an error could correspond to ± 0.03 inch Hg.

The Wallace and Tiernan barometer had an inherent error of ± 0.03 millibar, was calibrated to 1.0 mb and could be interpolated to ± 0.1 mb with a probable reading accuracy of ± 0.3 mb. The barometer was calibrated against the ship's barometer (USS Edisto) in January 1965 and again in January 1966 against the mercurial barometer at the British station on Argentine Islands. Several weeks of comparative readings indicated that the barometer had an error of only 0.1 mb (the reading accuracy of the scale).

When direct surface observations were made, thermometers were read to ± 0.1°F, correct to within 0.3°F. The running record of temperature on the thermograph was checked daily as far as possible and kept to within ± 1.0°F. Other errors in the thermograms can be attributed to slack in the clockwork drive mechanism accounting for an error of ± 1.0 °F.

The Lambrecht wind recorder provided a graph which, on an hourly basis, could be interpolated to ± 2%. The wind direction was recorded to within ± 5°. The major deficiency in the anemomograms resulted from occasional mechanical failure which caused the chart to be improperly advanced so that the record was lost for some periods.

The rain gauges were useful only during the summer months when precipitation occurred as rain. Following significant rainfalls, depth was read directly in hundredths of an inch, although the reliability of these measurements as being representative of precipitation at Palmer Station is questionable.

COMMENTS

Ceiling and Visibility

The meteorological facility was not equipped with a ceiling light so the cloud base could be determined during daylight hours only. Even at such times the observation had to be made as an estimate by comparison with nearby mountains in the Neumayer Channel area or against the Cape Monaco promontory. Problems arose when low clouds and fog formed in the Neumayer Channel and low clouds formed locally over Cape Monaco and obscured the reference. Local comparison against the ice piedmont was not possible as the steep grade leading away from the station leads to a horizon only 0.4 km away.

Observation of ceiling height greater then 1,525 m was not possible because of lack of reference. Low ceiling, up to 457 m could be determined accurately by virtue of the experiences of the glaciology group, who frequently reached the cloud base at known elevations.

The record of visibility is inadequate for tabular compilation. Visibility however, is generally good at sea level even with ceiling down to 150 m. The predominant cloud type is stratus (Fig. 12) which does not preclude visibility at sea level except for local snow squalls and drifting banks of sea fog.

Precipitation

During 1965 the facility was equipped with a standard US Weather Bureau 8-inch nonrecording rain gauge. During the period mid-December to early April, when the bulk of precipitation occurs as rain, this instrument may have some measure of reliability. At times when precipitation occurred as snow, the instrument was virtually useless.

To provide precipitation data for Palmer Station in 1965, six stakes were set in the ice ramp behind the station and frequently measured to record snow depth. Snow pits were dug to observe snow density.

In 1966 the 8-inch gauge was replaced by a shielded 12-inch automatic-weighing rain gauge. This was set at 3.7 m elevation and partly filled with antifreeze with an oil slick. Analysis of the precipitation record and the snow pit and stake observations for 1966 indicates that the shielded gauge collected approximately 30% of the

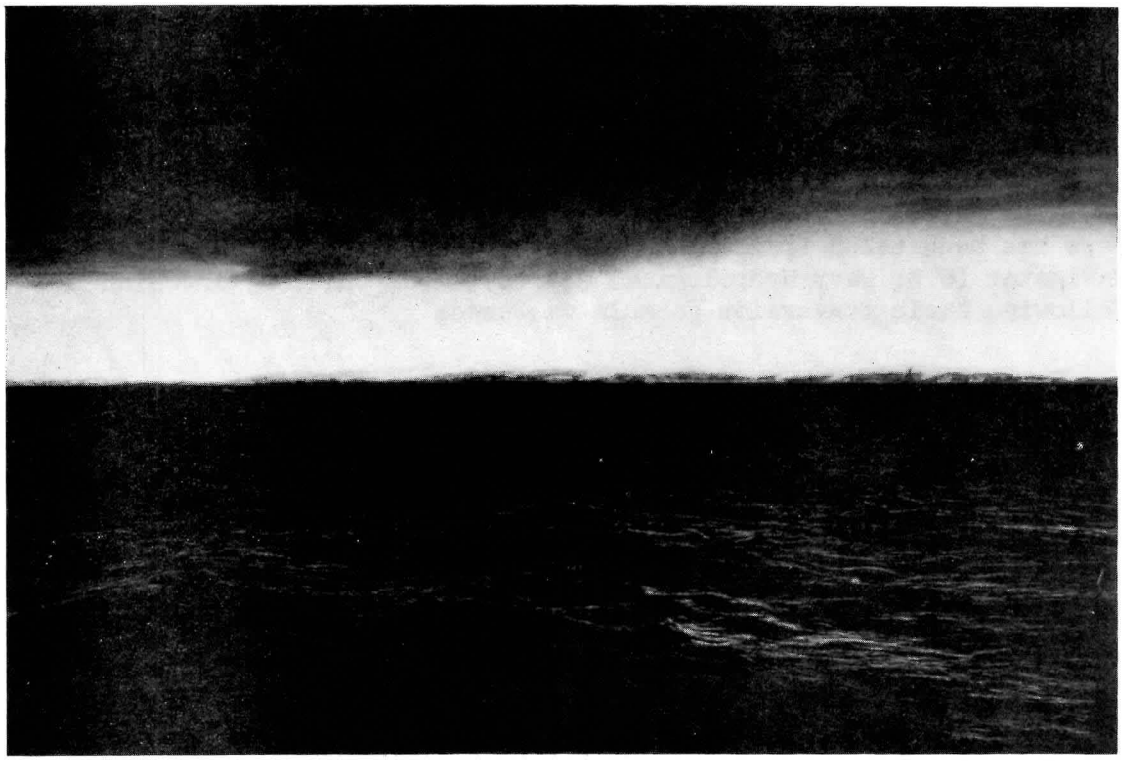


Fig. 12. Stratus cloud over Bismarck Strait, January 1966. Cloud base about 90 m (300 feet)

precipitation as recorded by the stakes and pits. Taking into account the possible accumulation on the ramp because of drifting snow and rime and ice formation, it is unlikely that the shielded gauge collected more than 50% of the actual precipitation.

Consequently, the values of precipitation in 1965 given below, are taken from the 8-inch gauge between February 1 and March 31 only. All others are from the stake and pit record. All values for 1965 and 1966 are from the shielded gauge.

Station Pressure

The tables of frequency of pressure for 1965 and 1966 are made up of 3-hourly recorded values from the barograms. The table of frequency of pressure in 1967 is compiled from Honkala's data which contained only daily mean pressure values.

The relationship between pressure in inches and pressure in millibars has been taken from the compiled tables of the American Practical Navigator (U.S. Navy Hydrological Office), 1962 edition, in which the following basic conversion formula was used:

$$P = \frac{B_m \, Dg}{1000}$$

where P = Pressure in millibars
B_m = Height of a column of mercury in millimeters
D = Density of mercury (13.5951 gm/cm^3)
g = Standard value of gravity (980.665 cm/sec^2)

The actual value of gravity at Palmer Station is 982.309 cm/sec^2 (Dewart 1971). The difference is not likely to significantly effect the pressure tables.

Thus the millibar values corresponding to inches are:

In	mb
30.12-30.40	1020-1029
29.83-30.11	1010-1019
29.53-29.82	1000-1009
29.23-29.52	990- 999
28.94-29.22	980- 989
28.64-28.93	970- 979
28.35-28.63	960- 969
28.05-28.34	950- 959
27.75-28.04	940- 949

Mechanical Recording of Wind

The Lambrecht wind recorder (Fig. 13) is a clockwork-driven instrument which records wind direction and wind run. It does not provide a record of prevailing wind speed. Figures 14, 15 and 16 show examples of the type of wind records obtained.

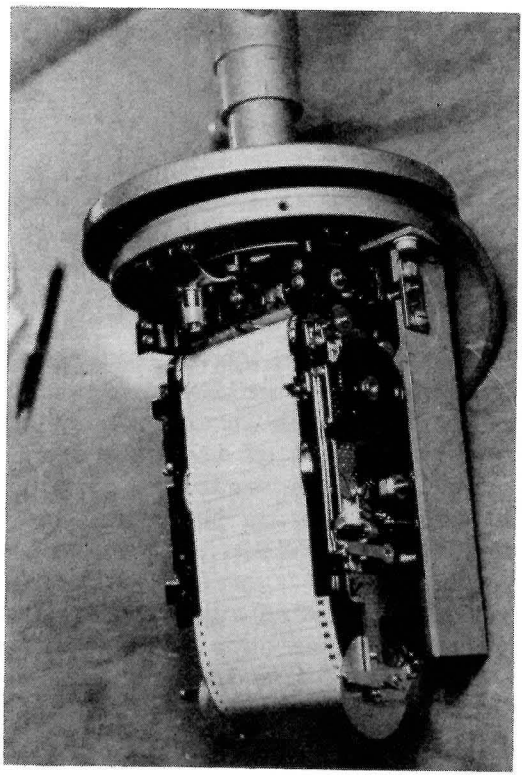
The clockwork drive advances a wax-coated chart which passes beneath two cylindrical drums, each with a helical ridge. One drum is connected directly to the wind vane and moves in accordance with it. The gear ratio of 1:1 causes one revolution of the drum for one revolution of the wind vane. Pressure acting on the recording drum causes the helical ridge to wear away the wax coating on the chart and gives the record of wind direction as a continuous trace.

The second drum, measuring wind run, is connected to the anemometer cups. The gear ration between the cups and the drum is 7.44:1. This gives one complete revolution of the drum for each 10,000 meters wind run. As is evident from figures 14-16, each single wind run trace represents the passage of 10 kilometers of wind.

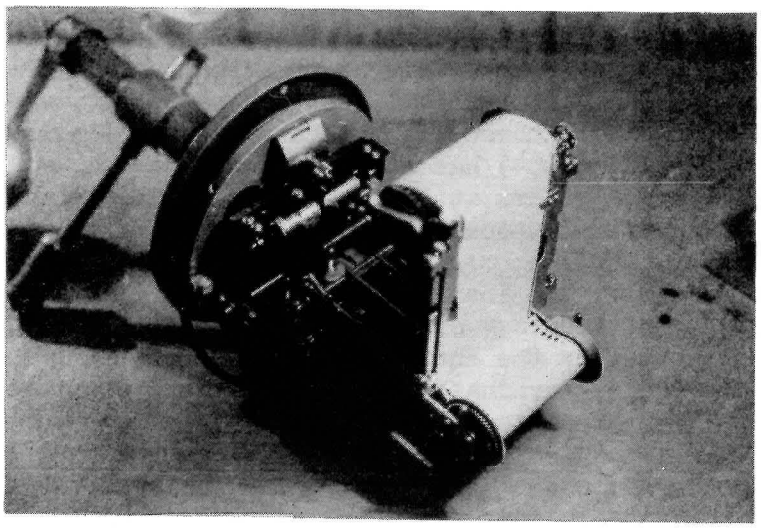
The method of reduction of the data charts for compilation of the tables of wind speed and direction given below, was similar to that of Kosiba (1964) and employs the accuracy of short-term averages. The recording of wind speed and direction was synchronous but because of the manner of recording, speed had to be calculated on the basis of "total wind" over given time intervals. The total wind passage was taken from the wind record at hourly intervals and interpreted as the average speed for that hour. By using a specially constructed template, the direction of the wind was taken from the chart, to the nearest 5°, at each $\frac{1}{4}$-hour interval, and the mean of these was interpreted as the average direction for that hour. Kosiba (1964) has stressed that the mean values of anemometric vector parameters at 15-minute intervals are much more representative than instantaneous values.

Whenever possible, the instrument was checked each day to maintain the maximum degree of accuracy of time on the chart. Such inspection involved making a tick on the chart with the appropriate time written in. By using the $\frac{1}{4}$-hour-graduated template, it was possible to reduce the record with time accurate to $\frac{1}{4}$-hour.

The beginning and end of the hourly wind run occur when the trace crosses the printed hour line. In determining the value of the wind run, the intersection of the trace and hour line has been determined to the nearest 0.1 km, but reading accuracy varied according to wind speed. The chart speed was 10 mm per hour giving an estimated reading accuracy of ± 0.1 km for wind passage values of 10-40 km/hr (2.8 to 11.1 m/sec), and up to ± 0.3 km for higher wind passage values. Overall, for wind passage values of 10 km/hr (2.8 m/sec) or greater, the estimated accuracy of the values presented is ± 2%, allowing for an inaccuracy of



a. Outer casing removed showing mechanism in operating position.



b. Inner mechanism open.

Fig. 13. Lambrecht wind recorder

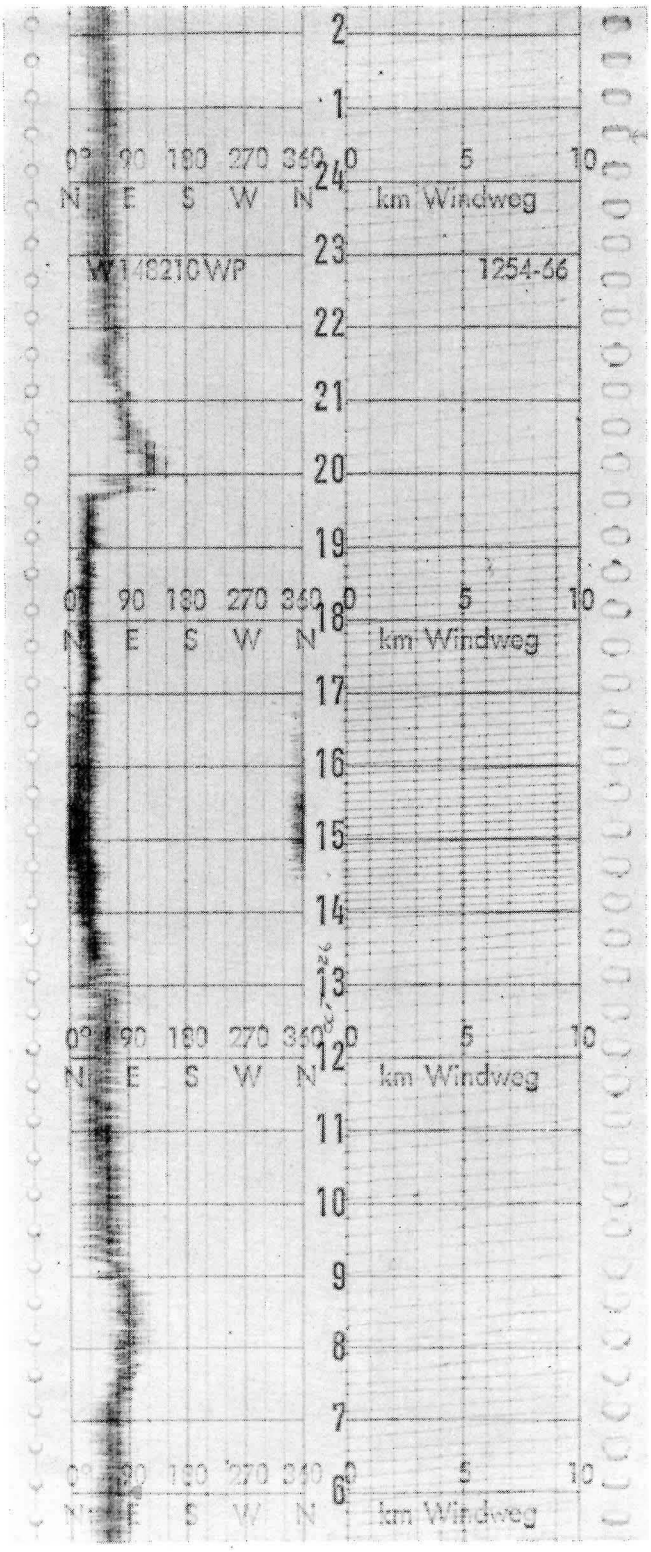


Fig. 14. Lambrecht wind record (actual size) showing general nature of record obtained. Note sudden increase in wind speed at 1400 hr. and sudden wind shift at 2000 hr

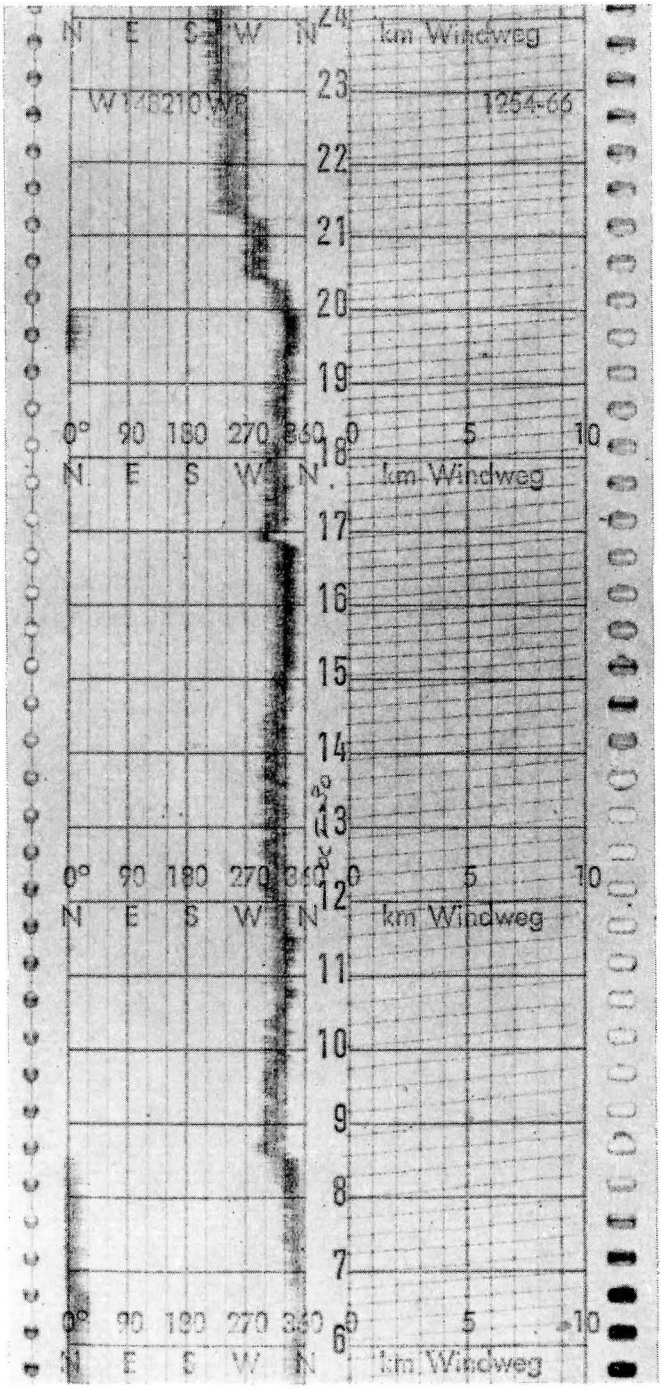


Fig. 15. Lambrecht wind record (actual size) showing sudden shift in wind direction

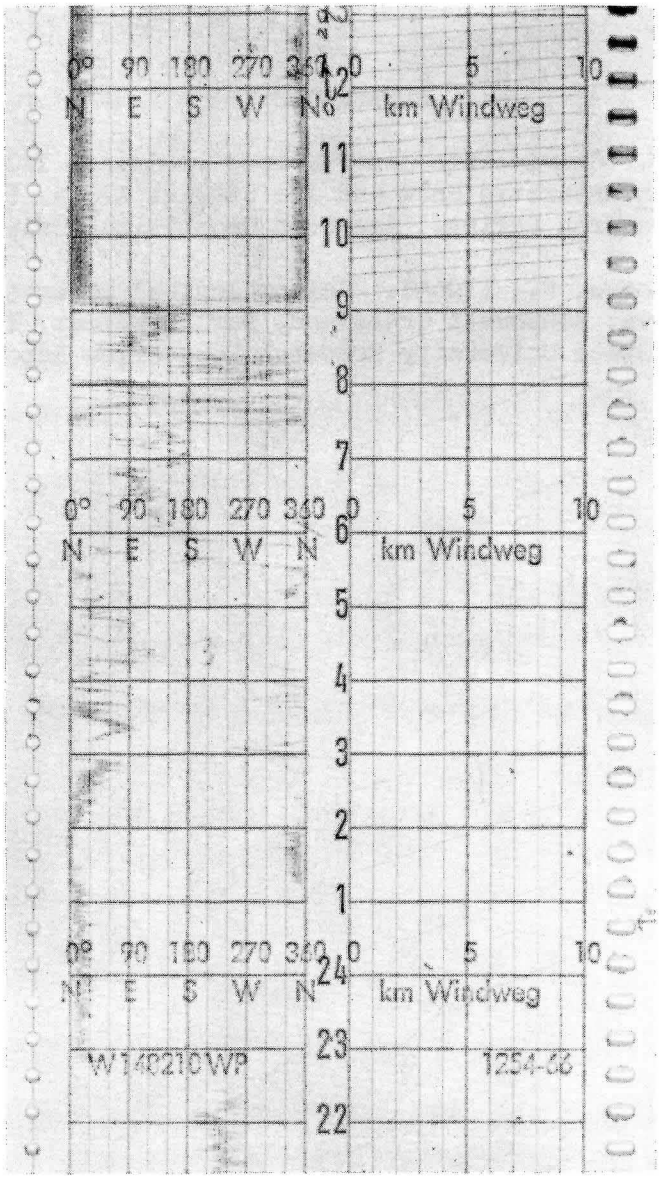


Fig. 16. Lambrecht wind record (actual size) showing direction indeterminate from 0730-0830 hr. and wind not blowing at 2230-2300 hr. and 0515-0615 hr.

reading of ± 1% at the beginning and end of the hour. For values up to 10 km/hr, reading error increases from ± 2% at 10 km/hr to ± 20% for 1 km/hr (0.3 m/sec). Technically, the reading error can amount to as much as 50% for values less than 1 km/hr, though at these very low values the error is probably nor particularly meaningful.

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APPENDIX II

DATA TABLES

Tabulated Data for 1965

Tabulated Data for 1966

Tabulated Data for 1967

TEMPERATURE

MONTHLY AVERAGES

AVERAGE AIR TEMPERATURE (°C)

YEAR 1965

JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
-	1.8	2.1	-2.2	-2.5	-4.7	-8.5	-10.5	-4.0	-7.7	-1.1	-0.1

Mean: -3.6

AVERAGES AND EXTREMES OF MAXIMUM AND MINIMUM DAILY AIR TEMPERATURE (°C)

YEAR 1965

	JANUARY		FEBRUARY		MARCH		APRIL	
	DEG	DAY	DEG	DAY	DEG	DAY	DEG	DAY
MAX	-	-	7.7	9	7.9	8	5.5	16
AVG	-		4.4		4.6		-0.1	
MIN	-	-	-2.0	5	-3.9	31	-9.7	15
AVG	-		-0.3		-0.2		-4.2	

	MAY		JUNE		JULY		AUGUST	
	DEG	DAY	DEG	DAY	DEG	DAY	DEG	DAY
MAX	5.3	30	5.1	9	4.2	29	3.2	20
AVG	-0.3		-2.1		-5.1		-6.8	
MIN	-9.6	13	-16.7	19	-26.1	19	-24.7	17
AVG	-4.7		-7.6		-13.0		-14.3	

	SEPTEMBER		OCTOBER		NOVEMBER		DECEMBER	
	DEG	DAY	DEG	DAY	DEG	DAY	DEG	DAY
MAX	5.7	20	3.2	30	6.4	24	6.2	30
AVG	-0.3		-3.6		1.9		2.3	
MIN	-20.2	17	-28.1	3	-13.2	1	-5.2	14
AVG	-8.6		-10.8		-4.2		-2.4	

OBSERVED VALUES OF MAXIMUM, MINIMUM AND MEAN
DAILY AIR TEMPERATURES (°C)

YEAR 1965

FEBRUARY

DATE	MAX	MIN	MEAN	DATE	MAX	MIN	MEAN
1	5.1	0.1	3.2	15	4.9	0.5	2.2
2	4.3	-1.1	1.2	16	6.4	-0.8	2.1
3	4.2	0.6	1.9	17	4.6	-1.4	1.1
4	1.6	-4.3	0.2	18	2.9	-0.6	1.1
5	6.2	-2.0	2.6	19	2.3	-0.1	0.9
6	7.0	4.0	5.4	20	4.1	-0.6	1.2
7	4.9	2.3	3.4	21	3.3	-1.3	1.1
8	2.3	-1.8	0.0	22	5.7	-0.1	1.7
9	7.7	0.1	3.8	23	5.7	1.6	3.4
10	4.9	1.1	3.2	24	2.9	0.6	1.6
11	4.7	0.9	3.0	25	1.8	0.0	0.7
12	1.1	-1.6	-0.2	26	3.4	-0.8	1.4
13	3.9	-1.7	0.4	27	2.8	0.3	1.5
14	4.6	0.9	2.3	28	2.9	0.1	1.1

MARCH

DATE	MAX	MIN	MEAN	DATE	MAX	MIN	MEAN
1	3.5	0.4	1.6	17	2.0	0.4	1.3
2	3.8	-1.0	1.4	18	4.6	0.4	2.2
3	5.6	0.6	2.3	19	1.8	-0.7	0.7
4	5.1	-0.3	1.9	20	5.2	1.8	3.6
5	3.8	0.5	1.8	21	3.7	-0.3	0.6
6	5.5	2.6	4.1	22	6.6	-0.9	2.7
7	6.3	3.2	5.1	23	4.4	0.1	2.5
8	7.9	1.5	4.7	24	4.8	2.3	3.3
9	7.2	2.2	4.0	25	2.7	-1.3	0.7
10	6.0	2.1	4.3	26	4.9	-1.9	2.8
11	6.6	4.1	5.3	27	4.2	1.2	2.7
12	5.6	0.4	2.1	28	1.9	-3.6	-0.6
13	6.8	1.1	4.1	29	2.8	-3.9	-0.8
14	5.0	-0.3	2.6	30	2.6	-3.7	-0.9
15	1.1	-2.4	-0.6	31	-2.3	-3.9	-3.0
16	6.1	-3.3	0.5				

Year 1965

APRIL

DATE	MAX	MIN	MEAN	DATE	MAX	MIN	MEAN
1	1.1	-3.7	-1.9	16	5.5	-3.5	1.1
2	2.1	-2.9	-0.6	17	3.1	-0.6	1.1
3	-2.4	-3.9	-3.2	18	2.3	-0.8	0.7
4	-2.9	-6.5	-4.4	19	2.9	-0.8	0.3
5	-4.1	-7.9	-5.4	20	3.8	-1.4	0.3
6	0.1	-7.2	-3.3	21	2.8	-3.1	-0.2
7	-0.1	-2.1	-1.2	22	2.4	-3.2	-0.7
8	-1.3	-4.8	-2.9	23	0.6	-1.8	-0.6
9	-1.2	-5.6	-3.4	24	-0.1	-4.1	-2.4
10	-3.3	-7.2	-4.8	25	-2.2	-5.7	-3.5
11	-1.5	-8.2	-4.9	26	-2.3	-4.2	-3.4
12	-1.4	-2.6	-2.0	27	-2.4	-4.2	-2.7
13	-2.6	-5.1	-3.7	28	0.6	-4.7	-2.5
14	-4.4	-9.2	-6.5	29	2.4	-2.6	0.1
15	-3.6	-9.7	-6.1	30	2.4	-0.1	0.9

MAY

DATE	MAX	MIN	MEAN	DATE	MAX	MIN	MEAN
1	0.8	-0.8	-0.1	17	-0.6	-4.3	-2.1
2	0.3	-2.2	-0.9	18	1.2	-3.1	0.1
3	1.7	-3.8	-0.8	19	1.2	-0.8	0.4
4	-2.7	-5.3	-3.7	20	1.3	0.0	0.4
5	-1.2	-5.7	-3.4	21	0.5	-6.8	-3.9
6	-1.7	-4.9	-2.6	22	0.0	-7.4	-1.6
7	-1.8	-6.6	-4.2	23	4.7	1.2	2.7
8	-4.4	-9.4	-7.1	24	2.8	0.7	1.9
9	-4.3	-9.5	-7.6	25	4.4	-0.4	1.7
10	-2.8	-6.6	-3.9	26	0.7	-3.4	-1.7
11	-2.7	-7.4	-6.0	27	1.9	-4.5	-2.2
12	-4.4	-8.1	-6.0	28	-2.8	-5.3	-3.8
13	-3.3	-9.6	-5.3	29	0.4	-7.5	-2.8
14	-3.1	-9.3	-6.1	30	5.3	0.6	3.0
15	-1.7	-3.7	-2.3	31	2.0	-6.6	-2.6
16	-0.3	-3.9	-1.0				

Year 1965

JUNE

DATE	MAX	MIN	MEAN	DATE	MAX	MIN	MEAN
1	1.3	-4.0	-1.3	16	-4.9	-8.9	-6.7
2	-0.9	-8.2	-3.3	17	-2.2	-8.0	-4.3
3	-4.6	-7.5	-5.9	18	-1.9	-13.4	-6.9
4	-4.8	-10.6	-7.0	19	-12.9	-16.7	-15.6
5	-2.8	-6.4	-4.8	20	-11.1	-15.9	-14.7
6	0.7	-6.8	-3.7	21	-10.1	-15.8	-12.4
7	1.6	-2.1	-0.2	22	-13.3	-16.0	-14.7
8	4.8	-0.9	2.9	23	-4.4	-14.1	-8.3
9	5.1	-1.7	0.4	24	-4.2	-11.6	-7.8
10	3.0	-0.4	1.9	25	-2.7	-11.5	-6.6
11	2.8	-2.1	0.2	26	0.7	-6.1	-1.8
12	0.6	-5.1	-1.6	27	2.0	-2.1	0.4
13	-2.8	-6.9	-4.8	28	0.9	-5.9	-2.8
14	-2.1	-7.0	-4.6	29	2.7	-2.7	0.8
15	-3.9	-8.8	-6.0	30	0.4	-3.2	-1.1

JULY

DATE	MAX	MIN	MEAN	DATE	MAX	MIN	MEAN
1	-0.3	-6.8	-4.4	17	-6.9	-22.0	-15.9
2	-0.9	-8.7	-5.5	18	-16.9	-23.4	-20.7
3	-4.5	-11.2	-6.9	19	-18.5	-26.1	-22.8
4	-8.2	-10.8	-9.0	20	-2.8	-20.3	-8.7
5	-9.1	-14.1	-10.7	21	-11.6	-19.1	-14.3
6	-9.3	-14.1	-11.5	22	-8.8	-13.4	-9.8
7	-6.8	-13.9	-8.1	23	-3.8	-15.0	-9.9
8	-7.0	-13.9	-10.4	24	-1.1	-5.2	-3.2
9	-5.6	-13.3	-8.6	25	-2.4	-13.7	-9.4
10	-11.7	-16.5	-14.1	26	-12.6	-17.7	-15.5
11	-9.8	-16.1	-13.0	27	-0.3	-12.8	-2.6
12	-0.4	-12.9	-5.9	28	2.9	-4.4	-0.3
13	0.1	-4.7	-2.2	29	4.2	-2.2	0.9
14	0.4	-1.8	0.2	30	4.2	-5.2	-1.4
15	-0.3	-17.9	-9.7	31	-0.9	-5.9	-3.7
16	-7.6	-17.4	-9.4				

Year 1965

AUGUST

DATE	MAX	MIN	MEAN	DATE	MAX	MIN	MEAN
1	-4.8	-7.7	-6.0	17	-14.4	-24.7	-20.4
2	-4.3	-11.1	-7.2	18	-8.9	-17.9	-14.4
3	-9.3	-13.3	-11.1	19	-2.1	-18.2	-5.9
4	-12.1	-16.2	-14.2	20	3.2	-5.3	-0.7
5	-14.9	-20.9	-17.4	21	2.2	-1.0	1.2
6	-15.4	-20.5	-17.7	22	1.7	-1.8	0.4
7	-15.9	-20.4	-17.7	23	2.1	-3.3	-0.4
8	-10.7	-19.8	-15.2	24	-2.7	-8.2	-4.9
9	-10.5	-20.0	-13.5	25	-1.6	-7.9	-5.5
10	-14.9	-21.8	-18.6	26	-3.2	-9.0	-5.8
11	-14.5	-21.8	-17.7	27	-1.6	-10.2	-5.3
12	-6.9	-22.2	-15.1	28	-10.2	-20.7	-18.2
13	-4.4	-7.6	-6.1	29	-11.7	-19.6	-15.6
14	-4.9	-15.0	-9.0	30	-4.7	-13.3	-8.4
15	-5.1	-13.2	-8.0	31	-2.7	-5.5	-3.3
16	-12.4	-23.2	-18.4				

SEPTEMBER

DATE	MAX	MIN	MEAN	DATE	MAX	MIN	MEAN
1	-1.2	-5.2	-2.7	16	-4.8	-18.8	-12.0
2	-2.9	-7.0	-4.2	17	0.3	-20.2	-7.3
3	-1.8	-11.7	-7.1	18	2.7	0.1	0.9
4	-0.1	-12.6	-8.3	19	2.8	-3.5	0.1
5	1.1	-13.4	-3.4	20	5.7	-1.6	2.1
6	1.8	-0.7	0.3	21	2.7	-4.1	1.0
7	0.4	-15.0	-6.4	22	1.9	-5.9	0.3
8	-4.9	-16.9	-12.2	23	1.8	-3.3	0.3
9	-1.8	-10.2	-4.8	24	0.3	-6.0	-3.7
10	-2.2	-14.8	-7.4	25	-1.7	-7.1	-4.2
11	0.9	-2.7	-0.1	26	2.4	-6.3	-2.3
12	1.3	-0.4	0.8	27	-0.9	-7.2	-3.7
13	1.1	-12.1	-2.9	28	-4.9	-10.3	-7.5
14	1.3	-8.3	-0.6	29	-5.3	-12.2	-9.0
15	1.7	-9.6	-5.7	30	-7.8	-11.2	-9.0

Year 1965

OCTOBER

DATE	MAX	MIN	MEAN	DATE	MAX	MIN	MEAN
1	-10.8	-17.3	-14.1	17	1.9	-0.4	0.1
2	-5.0	-23.2	-12.9	18	0.7	-5.4	-0.8
3	-14.9	-28.1	-21.7	19	-2.2	-4.3	-3.3
4	-5.6	-16.7	-11.9	20	-3.7	-7.9	-6.4
5	-7.2	-14.8	-10.6	21	-7.3	-10.1	-8.8
6	-8.6	-18.1	-13.6	22	-7.0	-11.9	-9.4
7	-9.9	-16.4	-13.2	23	-2.8	-14.6	-8.6
8	-10.9	-17.6	-14.7	24	-3.4	-8.2	-5.8
9	-6.7	-13.8	-9.3	25	0.9	-9.8	-5.6
10	-1.1	-11.2	-4.7	26	-0.4	-5.3	-2.9
11	-1.1	-7.0	-3.7	27	0.3	-5.8	-2.9
12	-4.6	-12.1	-8.1	28	-2.7	-11.1	-5.1
13	1.3	-13.3	-4.7	29	0.7	-8.7	-2.8
14	2.9	-5.6	0.5	30	3.2	-4.3	0.3
15	0.3	-4.9	-1.2	31	-3.3	-11.8	-9.1
16	0.3	-3.8	-1.1				

NOVEMBER

DATE	MAX	MIN	MEAN	DATE	MAX	MIN.	MEAN
1	-9.4	-13.2	-11.7	16	2.2	-1.5	-0.3
2	-6.7	-13.2	-11.0	17	3.3	-2.3	0.5
3	-1.2	-10.4	-6.3	18	4.8	-1.7	1.6
4	1.4	-12.1	-0.9	19	3.9	-4.8	-0.1
5	3.3	-0.6	1.3	20	6.0	-1.6	1.8
6	0.2	-1.8	-0.9	21	5.6	-0.9	1.3
7	0.8	-3.6	0.0	22	3.9	-0.4	1.6
8	1.6	-0.4	1.2	23	4.9	-4.5	-0.2
9	1.3	-0.1	0.8	24	6.4	-3.0	1.1
10	0.2	-5.6	-2.2	25	3.4	-4.2	-0.8
11	1.1	-8.1	-2.9	26	2.8	-3.1	-1.4
12	2.8	-5.9	0.3	27	1.2	-4.2	-1.9
13	0.6	-2.7	-0.6	28	4.2	-5.2	-1.2
14	2.9	0.3	1.8	29	2.8	-2.6	-0.2
15	3.2	-2.7	0.6	30	0.0	-4.8	-2.2

Year 1965

DECEMBER

DATE	MAX	MIN	MEAN	DATE	MAX	MIN	MEAN
1	2.3	-3.9	-0.1	17	1.2	-2.9	-0.6
2	0.2	-1.4	-1.1	18	2.3	-1.8	-0.5
3	1.1	-0.3	0.4	19	-0.1	-2.1	-0.3
4	3.3	-2.2	1.3	20	1.1	-2.5	-0.1
5	5.2	-3.7	1.4	21	2.9	-3.8	-0.4
6	2.2	-4.1	-1.7	22	1.1	-2.7	-0.4
7	-0.1	-4.4	-2.1	23	2.1	-1.2	0.4
8	2.5	-3.0	-0.3	24	0.7	-1.7	-0.6
9	0.7	-2.2	-0.2	25	0.6	-1.8	-0.8
10	2.3	-2.2	0.7	26	1.0	-2.2	-0.7
11	2.9	-3.9	-0.6	27	3.3	-0.8	0.7
12	0.1	-4.0	-1.6	28	1.7	-1.1	0.4
13	1.2	-2.6	-1.1	29	5.9	-2.9	0.6
14	2.2	-5.2	-1.7	30	6.2	-0.1	2.5
15	4.4	-0.6	1.9	31	4.6	2.0	2.9
16	4.6	-1.7	1.5				

PRESSURE

BAROMETRIC PRESSURE (P) (in mb)

Year 1965

	JANUARY		FEBRUARY		MARCH		APRIL	
	(P)	DAY	(P)	DAY	(P)	DAY	(P)	DAY
MAX	-	-	1015.4	28	1014.5	1	1010.8	13
AVG	-	-	997.4		981.4		989.9	
MIN	-	-	984.2	2	966.2	29	965.1	1

	MAY		JUNE		JULY		AUGUST	
	(P)	DAY	(P)	DAY	(P)	DAY	(P)	DAY
MAX	1013.6	14	1002.2	1	1017.3	10	1022.0	11
AVG	988.2		984.0		992.3		994.5	
MIN	963.5	27	960.7	29	955.1	31	959.5	20

	SEPTEMBER		OCTOBER		NOVEMBER		DECEMBER	
	(P)	DAY	(P)	DAY	(P)	DAY	(P)	DAY
MAX	1001.6	17	1007.6	12	1005.9	3	1007.2	20
AVG	976.1		977.2		976.5		992.8	
MIN	952.9	15	952.1	17	952.5	14	976.7	27

FREQUENCY OF PRESSURE
(by 10 mb)

(P)	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1020-1029	-							13				
1010-1019	-	14	8	3	17		23	11				
1000-1009	-	48	55	55	29	4	71	71	3	13	11	17
990- 999	-	136	55	61	46	61	54	60	13	15	13	94
980- 989	-	25	71	48	82	89	48	38	61	93	66	106
970- 979	-		46	50	56	80	35	22	104	49	75	29
960- 969			7	17	18	6	10	13	37	46	58	
950- 959			4				5	3	22	32	13	
TOTAL OBS		223	246	234	248	240	246	231	230	248	236	246

CLOUD COVER

TOTAL CLOUD AMOUNT OCCURRENCES BY TENTHS

Year 1965

SCALE 0-10	0	1	2	3	4	5	6	7	8	9	10	TOT OBS	AVG COVER
JAN	-	-	-	-	-	-	-	-	-	-	-	-	-
FEB	2	4	2	4	2	0	3	3	7	8	77	112	8.61
MAR	10	4	8	2	5	1	2	6	8	7	95	148	7.98
APR	9	1	3	2	1	1	5	7	4	8	78	119	8.28
MAY	18	2	4	4	4	3	2	4	7	5	99	152	7.79
JUN	14	0	4	5	6	1	4	8	10	8	110	170	8.14
JUL	23	16	2	6	0	2	4	4	6	10	101	174	7.17
AUG	36	2	2	2	1	2	1	4	3	5	22	80	4.36
SEP	11	4	2	7	6	2	1	2	4	9	116	164	8.26
OCT	8	2	3	2	3	4	4	6	10	20	102	164	8.48
NOV	1	1	0	1	5	3	1	4	6	14	124	160	9.29
DEC	6	5	1	3	3	0	4	3	7	25	92	149	8.41
											TOTAL OBS	1592	

ANNUAL AVERAGE COVER 7.89

OCCURRENCE OF CEILING HEIGHT
(Feet)

HEIGHT	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
0	-	1	0	0	1	1	4	2	1	4	10	0
100-200	-	8	10	0	4	2	9	1	9	1	2	2
300-400	-	1	8	10	3	2	8	0	17	1	3	3
500-900	-	25	5	18	6	23	13	6	24	24	28	20
1000-1900	-	18	20	6	14	24	8	6	21	51	52	36
2000-2900	-	15	2	16	11	6	9	4	13	25	27	22
3000-5000	-	13	6	9	16	18	14	10	16	22	15	25
Over 5000	-	9	6	4	8	8	2	11	14	7	9	32
Total Obs	-	90	57	63	63	84	67	40	125	135	146	140

PRECIPITATION AND FOG

NUMBER OF OBSERVATIONS WITH OCCURRENCE OF WEATHER

YEAR 1965

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Rain and Drizzle/ Freezing Rain and Drizzle	-	6	31	1	7	7	1	0	9	0	15	8
Sleet	-	0	1	1	0	1	0	0	9	1	1	0
Snow	-	8	11	37	37	43	47	22	58	45	43	39
Fog and Ice Fog	-	12	8	6	0	11	20	12	2	5	10	8
Blowing and Drifting Snow	-	0	0	0	27	34	10	14	16	11	0	6

NUMBER OF DAYS WITH RAIN AND DRIZZLE/ FREEZING RAIN AND DRIZZLE

JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
-	6	16	1	5	3	1	0	5	0	6	5

NUMBER OF DAYS WITH SNOW AND SLEET

JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
-	5	10	17	15	20	18	8	22	18	19	16

TOTAL MONTHLY PRECIPITATION (cm)

JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
-	4.7	5.3	5.3	7.5	5.1	10.4	2.2	5.9	4.1	4.4	2.2

Annual Total: 57.1

WIND

MEAN MONTHLY WIND SPEED

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	AVG
Kts	-	5.4	9.1	7.2	8.7	11.0	5.7	5.0	12.9	10.0	8.4	6.2	7.9
M/s	-	2.8	4.6	3.7	4.4	5.7	2.9	2.6	6.8	5.1	4.5	3.2	4.0

YEAR 1965

THREE-HOURLY OBSERVATIONS OF WIND SPEED (10m) AND TEMPERATURE

GIVING

NUMBER OF OBSERVATIONS WITH OCCURRENCE OF WIND SPEED

AND TEMPERATURE

YEAR 1965

FEBRUARY

TEMP °C	WIND SPEED (m/sec)				TOTAL	TEMP °F
	0.0-2.5	2.6-7.5	7.6-12.9	13.0 -		
4.5/ 7.2	5	6	9	1	21	40/44
1.7/ 4.4	40	17	8		65	35/39
-1.1/ 1.6	62	10	1		73	30/34
-3.8/ -1.2	1				1	25/29
	108	33	18	1	160	

MARCH

TEMP °C	WIND SPEED (m/sec)				TOTAL	TEMP °F
	0.0-2.5	2.6-7.5	7.6-12.9	13.0 -		
4.5/ 7.2	6	6	17	8	37	40/44
1.7/ 4.4	23	24	14	6	67	35/39
-1.1/ 1.6	22	23			45	30/34
-3.8/ -1.2	4				4	25/29
	55	53	31	14	153	

APRIL

TEMP °C	WIND SPEED (m/sec)				TOTAL	TEMP °F
	0.0-2.5	2.6-7.5	7.6-12.9	13.0 -		
1.7/ 4.4	1	4			5	35/39
-1.1/ 1.6	23	10	8	5	46	30/34
-3.8/ -1.2	22	15	2	1	40	25/29
-6.6/ -3.9	7	5	1		13	20/24
	53	34	11	6	104	

YEAR 1965

MAY

TEMP °C	WIND SPEED (m/sec)				TOTAL	TEMP °F
	0.0-2.5	2.6-7.5	7.6-12.9	13.0 -		
4.5/ 7.2		1			1	40/44
1.7/ 4.4	1	6	6		13	35/39
-1.1/ 1.6	12	33	15	6	56	30/34
-3.8/ -1.2	43	19	3	1	66	25/29
-6.6/ -3.9	20	25	3	1	49	20/24
-9.4/ -6.7	6	13	2		21	15/19
	82	97	29	8	206	

JUNE

TEMP °C	WIND SPEED (m/sec)				TOTAL	TEMP °F
	0.0-2.5	2.6-7.5	7.6-12.9	13.0 -		
1.7/ 4.4		3	6	7	16	35/39
-1.1/ 1.6	17	18	17	6	58	30/34
-3.8/ -1.2	9	11	21	5	46	25/29
-6.6/ -3.9	12	28	12	4	56	20/24
-9.4/ -6.7	10	10	3		23	15/19
-12.2/ -9.5	7	5			12	10/14
-15.0/-12.3	5	8	1		14	05/09
-18.7/-15.1	1	12	2		15	00/04
	61	95	62	22	240	

JULY

TEMP °C	WIND SPEED (m/sec)				TOTAL	TEMP °F
	0.0-2.5	2.6-7.5	7.6-12.9	13.0 -		
1.7/ 4.4		3	3		6	35/39
-1.1/ 1.6	1	11	12	2	26	30/34
-3.8/ -1.2	8	16	4	2	30	25/29
-6.6/ -3.9	19	8	5		32	20/24
-9.4/ -6.7	33	10	2		45	15/19
-12.2/ -9.5	39	6	1		46	10/14
-15.0/-12.3	25	3			28	05/09
-18.7/-15.1	10	3			13	00/04
-21.0/-18.8	4	2			6	-05/01
-23.8/-21.1	10				10	-10/06
-26.6/-23.9	2				2	-15/11
	151	62	27	4	244	

YEAR 1965

AUGUST

TEMP °C	WIND SPEED (m/sec)				TOTAL	TEMP °F
	0.0-2.5	2.6-7.5	7.6-12.9	13.0 -		
1.7/ 4.4			4	1	5	35/39
-1.1/ 1.6	2	4	16	2	24	30/34
-3.8/ -1.2	6	2	4	1	13	25/29
-6.6/ -3.9	30	10	3		43	20/24
-9.4/ -6.7	16	4			20	15/19
-12.2/ -9.5	19	1			20	10/14
-15.0/-12.3	20	1			21	05/09
-18.7/-15.1	33	2			35	00/04
-21.0/-18.8	26	5			31	-05/01
-23.8/-21.1	7				7	-10/06
-26.6/-23.9	1				1	-15/11
	160	29	27	4	220	

SEPTEMBER

TEMP °C	WIND SPEED (m/sec)				TOTAL	TEMP °F
	0.0-2.5	2.6-7.5	7.6-12.9	13.0 -		
4.5/ 7.2				1	1	40/44
1.7/ 4.4		1	4	4	9	35/39
-1.1/ 1.6	6	13	37	18	74	30/34
-3.8/ -1.2	17	13	6	7	43	25/29
-6.6/ -3.9	9	13	6		28	20/24
-9.4/ -6.7	16	3	1		20	15/19
-12.2/ -9.5	7	9	2		18	10/14
-15.0/-12.3			1		1	05/09
-18.7/-15.1		1			1	00/04
-21.0/-18.8	3				3	-05/01
	58	53	57	30	198	

YEAR 1965

OCTOBER

TEMP °C	WIND SPEED (m/sec)				TOTAL	TEMP °F
	0.0-2.5	2.6-7.5	7.6-12.9	13.0 -		
1.7/ 4.4		2	3	2	7	35/39
-1.1/ 1.6	3	6	24	4	37	30/34
-3.8/ -1.2	6	17	21	5	49	25/29
-6.6/ -3.9	20	15	1	1	37	20/24
-9.4/ -6.7	19	22	1		42	15/19
-12.2/ -9.5	13	14			27	10/14
-15.0/-12.3	22	7	1		30	05/09
-18.7/-15.1	5	7			12	00/04
-21.0/-18.8		2	1		3	-05/01
-23.8/-21.1						-10/06
-26.6/-23.9	1		1		2	-15/11
-29.4/-26.7		2			2	-20/16
	89	94	53	12	248	

NOVEMBER

TEMP °C	WIND SPEED (m/sec)				TOTAL	TEMP °F
	0.0-2.5	2.6-7.5	7.6-12.9	13.0 -		
4.5/ 7.2	1				1	40/44
1.7/ 4.4	13	15	7	3	38	35/39
-1.1/ 1.6	40	20	12	15	87	30/34
-3.8/ -1.2	35	12	2		49	25/29
-6.6/ -3.9	7	3			10	20/24
-9.4/ -6.7	3				3	15/19
-12.2/ -9.5	3	11	1		15	10/14
-15.0/-12.3		3			3	05/09
	102	64	22	18	206	

DECEMBER

TEMP °C	WIND SPEED (m/sec)				TOTAL	TEMP °F
	0.0-2.5	2.6-7.5	7.6-12.9	13.0 -		
4.5/ 7.2		1		1	2	40/44
1.7/ 4.4	15	9	13	2	39	35/39
-1.1/ 1.6	88	41	17		146	30/34
-3.8/ -1.2	37	19	2		58	25/29
-6.6/ -3.9	1				1	20/24
	141	70	32	3	246	

YEAR 1965

THREE-HOURLY OBSERVATIONS OF WIND SPEED (10m)

GIVING

NUMBER OF OBSERVATIONS WITH OCCURRENCE OF WIND SPEED

AND DIRECTION

FEBRUARY 1965

m/sec	0-2.0	2.1-4.0	4.1-6.6	6.7-9.7	9.8-12.8	12.9-16.4	16.5-20.0	20.1-24.1	24.2-25.7	Freq %	Mean Speed Kts	Mean Speed m/sec	Total Obs
Knots	0-3	4-7	8-12	13-18	19-24	25-31	32-38	39-46	47-50				
N	6		8	2						9.9	7.7	4.0	16
NNE	6	7	1	1						9.2	4.3	2.2	15
NE	6	1	1	1						5.5	4.8	2.5	9
ENE	7	3		1						6.8	4.2	2.2	11
E	8	2		1						6.8	3.4	1.7	11
ESE	6									3.7	2.0	1.0	6
SE	2	2								2.5	3.7	1.9	4
SSE	4									2.5	2.0	1.0	4
S	4									2.5	2.0	1.0	4
SSW	4									2.5	2.0	1.0	4
SW	2									1.2	2.0	1.0	2
WSW										0	0	0	0
W	2	1								1.8	3.2	1.6	3
WNW	2	1								1.8	3.2	1.6	3
NW	4		1	2	2					5.5	9.4	4.8	9
NNW	6	1	2	9	7	1				16.0	13.7	7.0	26
								CALM		21.6			35
	69	18	13	17	9	1						TOTAL OBS	162
%	42.6	11.1	8.0	10.5	5.5	0.6							

MARCH 1965

m/sec	0-2.0	2.1-4.0	4.1-6.6	6.7-9.7	9.8-12.8	12.9-16.4	16.5-20.0	20.1-24.1	24.2-25.7	Freq %	Mean Speed Kts	Mean Speed m/sec	Total Obs
Knots	0-3	4-7	8-12	13-18	19-24	25-31	32-38	39-46	47-50				
N	1	1	6	7	9	8				20.9	18.5	9.5	32
NNE	2	2	4	8	7	1	1			16.3	15.7	8.1	25
NE	1	1	3	1						3.9	8.8	4.5	6
ENE	1		2	4						4.6	12.5	6.4	7
E	7	2	2							7.2	4.1	2.1	11
ESE	5	1	1							4.6	3.6	1.8	7
SE	5		1							3.9	3.3	1.7	6
SSE	1	2								2.0	4.3	2.2	3
S		1								0.6	5.5	2.8	1
SSW										0	0	0	0
SW	1									0.6	2.0	1.0	1
WSW		1	1	2						2.6	11.6	6.0	4
W	3	1	2							3.9	5.2	2.7	6
WNW	2	3								3.3	4.1	2.1	5
NW	3	2	2							4.6	5.0	2.6	7
NNW	8	7	1	1	2	2				13.7	8.5	4.4	21
	40	24	25	23	18	11	1		CALM	7.2			11
											TOTAL OBS		153
%	26.1	15.7	16.3	15.0	11.8	6.8	0.6						

APRIL 1965

m/sec	0-2.0	2.1-4.0	4.1-6.6	6.7-9.7	9.8-12.8	12.9-16.4	16.5-20.0	20.1-24.1	24.2-25.7	Freq %	Mean Speed Kts	Mean Speed m/sec	Total Obs
Knots	0-3	4-7	8-12	13-18	19-24	25-31	32-38	39-46	47-50				
N	4	1	3	2	1	2	2			14.4	14.8	7.6	15
NNE	1	3	3	1		1				8.6	10.2	5.2	9
NE	4		1		1		1			6.7	10.6	5.4	7
ENE			2	3						4.8	13.3	6.8	5
E	4	1		1						5.8	4.8	2.5	6
ESE	2			2	1					4.8	11.3	5.8	5
SE	2	1	1							3.8	4.9	2.5	4
SSE		1	2							2.9	8.5	4.4	3
S	2		2	1						4.8	7.9	4.1	5
SSW	1	2								2.9	4.3	2.2	3
SW	1	2	3	1						6.7	8.3	4.3	7
WSW		1	1							1.9	7.7	4.0	2
W	1		1							1.9	6.0	3.1	2
WNW	1									1.0	2.0	1.0	1
NW										0	0	0	0
NNW	2	1	2	1						5.8	7.5	3.9	6
	25	13	21	12	3	3	3		CALM	23.1		TOTAL OBS	24 / 104
%	24.0	12.5	20.2	11.5	2.9	2.9	2.9						

MAY 1965

m/sec	0-2.0	2.1-4.0	4.1-6.6	6.7-9.7	9.8-12.8	12.9-16.4	16.5-20.0	20.1-24.1	24.2-25.7	Freq %	Mean Speed Kts	Mean Speed m/sec	Total Obs
Knots	0-3	4-7	8-12	13-18	19-24	25-31	32-38	39-46	47-50				
N	5	1		6		1				6.0	10.5	5.4	13
NNE	8	12	2	2	2					12.1	6.8	3.5	26
NE	6	4	5	5	2	3				11.6	11.5	5.9	25
ENE	1	5	7	6	1	1				9.8	11.5	5.9	21
E	2	5	7	7	2	1				11.6	11.2	5.8	24
ESE	4	2	2	4						5.6	8.4	4.3	12
SE	2	1		1						1.9	6.2	3.2	4
SSE	2	1	1							1.9	4.9	2.5	4
S	2	1	1							1.9	4.9	2.5	4
SSW	2	5								3.2	4.5	2.3	7
SW	4		2							2.8	4.6	2.4	6
WSW	3	2		2	1	1				4.2	10.8	5.6	9
W		1								0.5	5.5	2.8	1
WNW	2		1	1	1					2.3	10.2	5.2	5
NW	1	4	11	2						8.4	9.2	4.7	18
NNW		5	5	2	1	1				6.5	11.3	5.8	14
	44	49	44	38	10	8			CALM	9.8			21
												TOTAL OBS	214
%	20.6	22.9	20.6	17.7	4.7	3.7							

JUNE 1965

m/sec	0-2.0	2.1-4.0	4.1-6.6	6.7-9.7	9.8-12.8	12.9-16.4	16.5-20.0	20.1-24.1	24.2-25.7	Freq %	Mean Speed Kts	Mean Speed m/sec	Total Obs
Knots	0-3	4-7	8-12	13-18	19-24	25-31	32-38	39-46	47-50				
N	5	4		5	6	8				12.0	16.5	8.5	28
NNE	2	1	3	4	6	6	1			9.4	19.7	10.1	23
NE	2	2	2	4	3	3				6.9	15.3	7.9	16
ENE	4	4	3	4	1	2	1			7.7	13.0	6.7	19
E	1	7	1	1		1				4.7	8.5	4.4	11
ESE	3	6	2							4.7	5.4	2.8	11
SE	1	6	1	2						4.3	7.6	3.9	10
SSE	2									0.8	2.0	1.0	2
S	1	3	5	5						6.0	10.4	5.3	14
SSW	3	9	13	9	3					15.9	10.5	5.4	37
SW		5	5	3	1					6.0	10.4	5.3	14
WSW	1	1		2	1					2.1	12.0	6.2	5
W	3	1		1	1					2.6	8.1	4.2	6
WNW	2	1	1	3						3.0	9.4	4.8	7
NW										0	0	0	0
NNW	1		4	6						4.7	12.3	6.3	11
	31	50	40	49	22	20	2		CALM	9.0			21
												TOTAL OBS	235
%	13.2	21.3	17.0	20.8	9.4	8.5	0.8						

JULY 1965

m/sec	0-2.0	2.1-4.0	4.1-6.6	6.7-9.7	9.8-12.8	12.9-16.4	16.5-20.0	20.1-24.1	24.2-25.7	Freq %	Mean Speed Kts	Mean Speed m/sec	Total Obs
Knots	0-3	4-7	8-12	13-18	19-24	25-31	32-38	39-46	47-50				
N	2	2	3	1	1		1			4.1	11.7	6.0	10
NNE	7	5	2	2	2	1	1			8.2	14.0	7.2	20
NE	8	4	2	2						6.5	5.6	2.9	16
ENE	4	3	4	2	2					6.1	9.2	4.7	15
E	7	4		4	1					6.5	7.5	3.9	16
ESE	8	2	2	4						6.5	6.8	3.5	16
SE	6	2		1						3.7	4.3	2.2	9
SSE	3		1							1.6	4.0	2.1	4
S	6	1								2.9	2.5	1.3	7
SSW	1	2	1	1						2.0	7.7	4.0	5
SW	3	1	1							2.0	4.3	2.2	5
WSW	3		1							1.6	4.0	2.1	4
W	3		1	2						2.4	7.8	4.0	6
WNW	2	3	2	1	1					3.7	8.6	4.4	9
NW	1	1	4	1	2					3.7	11.8	6.1	9
NNW	5	3	3	5	1	1				7.4	10.2	5.2	18
	69	33	27	26	10	2	2		CALM	30.7			75
												TOTAL OBS	244
%	28.3	13.5	11.1	10.6	4.1	0.8	0.8						

AUGUST 1965

m/sec	0-2.0	2.1-4.0	4.1-6.6	6.7-9.7	9.8-12.8	12.9-16.4	16.5-20.0	20.1-24.1	24.2-25.7	Freq %	Mean Speed Kts	Mean Speed m/sec	Total Obs
Knots	0-3	4-7	8-12	13-18	19-24	25-31	32-38	39-46	47-50				
N	3	3	2	1	6					6.8	12.4	6.4	15
NNE	10	6	1	2	7	2			1	13.2	12.0	6.2	29
NE	8		2	1			1			5.4	7.2	3.7	12
ENE	1	2	1		1					2.3	8.9	4.6	5
E	7	2	1	1						5.0	4.6	2.4	11
ESE	2	3								2.3	4.1	2.1	5
SE	4									1.8	4.0	2.1	4
SSE	1	1								0.9	3.8	1.9	2
S		1		1						0.9	10.5	5.4	2
SSW	3									1.3	2.0	1.0	3
SW	3		2	1						2.7	6.9	3.5	6
WSW	1	1		2						1.8	9.6	4.9	4
W	2	2	2							2.7	5.8	3.0	6
WNW				1						0.4	15.5	8.0	1
NW			2	1						1.3	11.8	6.1	3
NNW	3	1	2	2	3					5.0	11.5	5.9	11
	48	22	15	13	17	2	1		1	45.9 CALM		TOTAL OBS	101 220
%	21.8	10.0	6.8	5.9	7.7	0.9	0.4		0.4				

SEPTEMBER 1965

m/sec	0-2.0	2.1-4.0	4.1-6.6	6.7-9.7	9.8-12.8	12.9-16.4	16.5-20.0	20.1-24.1	24.2-25.7	Freq %	Mean Speed Kts	Mean Speed m/sec	Total Obs
Knots	0-3	4-7	8-12	13-18	19-24	25-31	32-38	39-46	47-50				
N		2	2	3	7	10	2			13.5	22.2	11.4	26
NNE	4	5	3	12	7	7	6	1		23.4	18.9	9.7	45
NE	3	6	4	3	3			1		10.4	11.7	6.0	20
ENE	2	4								3.1	4.3	2.2	6
E	3	3	3	1						5.2	6.8	3.5	10
ESE	2	1								1.5	3.2	1.6	3
SE		2								1.0	5.5	2.8	2
SSE		1								0.5	5.5	2.8	1
S				1						0.5	15.5	8.0	1
SSW	1			1						1.0	8.8	4.5	2
SW	3	2	3	2						5.2	7.8	4.0	10
WSW	1	2			1					2.0	8.9	4.6	4
W		1	2							1.5	8.5	4.4	3
WNW	3		2							2.6	5.2	2.7	5
NW	4	3	2	1	4	1				7.8	11.6	6.0	15
NNW		1	1	9	10	3				12.5	19.3	9.9	24
	26	33	22	33	32	21	8	2	CALM	7.8			15
												TOTAL OBS	192
%	13.5	17.2	11.4	17.2	16.7	10.9	4.2	1.0					

OCTOBER 1965

m/sec	0-2.0	2.1-4.0	4.1-6.6	6.7-9.7	9.7-12.8	12.9-16.4	16.5-20.0	20.1-24.1	24.2-25.7	Freq %	Mean Speed Kts	Mean Speed m/sec	Total Obs
Knots	0-3	4-7	8-12	13-18	19-24	25-31	32-38	39-46	47-50				
N	1	3	3	4	6	2		1		8.2	16.9	8.7	20
NNE	5	5	3	4	3	2	2	1		10.3	14.5	7.5	25
NE	2	2	4	5	3	2				7.4	14.0	7.2	18
ENE	2	1	1	1						2.0	7.0	3.6	5
E	3	3	2	2	1	1				4.9	10.2	5.2	12
ESE	5	5	3							5.3	5.2	2.7	13
SE	2	2	1							2.0	5.0	2.6	5
SSE	2	6		1						3.7	5.8	3.0	9
S	1	5		1						2.9	5.6	2.9	7
SSW	2	9	4							6.0	6.2	3.2	15
SW	7	5	10	3						10.3	7.5	3.9	25
WSW	4	8	3	2		1				7.4	7.8	4.0	18
W	1	4	2							2.9	6.3	3.2	7
WNW	1	3	2	2						3.3	8.9	4.6	8
NW	3	2	2	3	5					6.0	12.7	6.5	15
NNW	8	1	1	3	10					9.5	12.7	6.5	23
	49	64	41	31	28	8	2	2	CALM	7.4			18
												TOTAL OBS	243
%	20.2	26.3	16.9	12.7	11.5	3.3	0.8	0.8					

NOVEMBER 1965

m/sec	0-2.0	2.1-4.0	4.1-6.6	6.7-9.7	9.8-12.8	12.9-16.4	16.5-20.0	20.1-24.1	24.2-25.7	Freq %	Mean Speed Kts	Mean Speed m/sec	Total Obs
Knots	0-3	4-7	8-12	13-18	19-24	25-31	32-38	39-46	47-50				
N			4	3	8	7	2	1		12.0	22.7	11.7	25
NNE	1		3		1	3				3.8	17.2	8.8	8
NE										0	0	0	0
ENE	1									0.9	2.0	1.0	1
E	2	5	1							3.8	5.2	2.7	8
ESE	9	7								7.6	3.5	1.8	16
SE	6	4								4.3	3.4	1.7	10
SSE	2	2		1						2.4	3.0	1.5	5
S	4	2								2.9	3.2	1.6	6
SSW	2	3	4							4.3	6.7	3.4	9
SW	5	2	8	5						9.6	8.9	4.6	20
WSW	3	2								2.4	3.4	1.7	5
W	4	2	1	1						3.3	5.6	2.9	8
WNW	5	2	2	4						6.2	7.9	4.1	13
NW	5		2	5		1				6.2	10.4	5.3	13
NNW	4	1	2	3	1	3	1			7.2	14.7	7.6	15
	53	32	27	22	10	14	3	1	CALM	22.5		TOTAL OBS	47 209
%	25.3	15.3	12.9	10.5	4.8	6.7	1.4	0.5					

DECEMBER 1965

m/sec	0-2.0	2.1-4.0	4.1-6.6	6.7-9.7	9.8-12.8	12.9-16.4	16.5-20.0	20.1-24.1	24.2-25.7	Freq %	Mean Speed Kts	Mean Speed m/sec	Total Obs
Knots	0-3	4-7	8-12	13-18	19-24	25-31	32-38	39-46	47-50				
N	3	3	3	7	1	1		1		7.7	13.3	6.8	19
NNE	4	3	3	1		1				4.9	8.2	4.2	12
NE		2	3	1						2.4	9.4	4.8	6
ENE	2	2	2	2	2					4.1	6.2	3.2	10
E	5	11	1	3	9					11.8	11.0	5.7	29
ESE	9	2	4	2						6.9	5.9	3.0	17
SE	8	4			1					5.3	4.6	2.4	13
SSE	4	2								2.4	3.2	1.6	6
S	3	1	1							2.0	4.3	2.2	5
SSW	4	2	7	1						5.7	7.5	3.9	14
SW	6	1								2.8	2.5	1.3	7
WSW	5	3								3.2	3.3	1.7	8
W	4	1								2.0	2.7	1.4	5
WNW	5	4	1							4.1	4.2	2.2	10
NW	6	2	2	1						4.5	5.3	2.7	11
NNW	3	2	2	5						4.9	9.5	4.9	12
	71	45	29	23	13	2		1	CALM	25.2			62
												TOTAL OBS	246
%	28.9	18.3	11.8	9.3	5.3	0.8		0.4					

MEAN: 1965 (Feb-Dec)

m/sec	0-2.0	2.1-4.0	4.1-6.6	6.7-9.7	9.8-12.8	12.9-16.4	16.5-20.0	20.1-24.1	24.2-25.7	Freq %	Mean Speed Kts	Mean Speed m/sec	Total Obs
Knots	0-3	4-7	8-12	13-18	19-24	25-31	32-38	39-46	47-50				
N	30	20	34	41	45	39	8	3	1	9.9	16.6	8.5	221
NNE	50	49	28	37	35	24	11	2		10.6	13.2	6.8	236
NE	40	22	27	23	12	8	2	1	1	6.1	10.8	5.6	136
ENE	25	24	22	23	7	3	1			4.7	9.8	5.0	105
E	49	45	18	21	13	3				6.7	8.1	4.2	149
ESE	55	29	14	12	1					5.0	5.5	2.8	111
SE	38	24	4	4	1					3.2	4.7	2.4	71
SSE	21	16	4	2						1.9	4.7	2.4	43
S	23	15	9	9						2.5	6.4	3.3	56
SSW	23	32	29	12						4.3	7.3	3.7	96
SW	35	18	34	15	1					4.6	7.4	3.8	103
WSW	21	21	6	10	3	2				2.8	7.8	3.9	63
W	23	14	11	4	1					2.4	6.0	3.1	53
WNW	25	17	11	12	2					3.0	7.2	3.7	67
NW	27	14	28	16	13	2				4.5	9.9	5.1	100
NNW	40	23	25	46	35	11	1			8.1	12.5	6.4	181
	525	383	304	287	169	92	23	6	2	19.4	CALM		430
												TOTAL OBS	2221
%	23.6	17.2	13.7	12.9	7.6	4.1	1.0	0.3	0.1				

AVERAGES AND EXTREMES OF MAXIMUM AND
MINIMUM DAILY AIR TEMPERATURE (°C)

(300 m Elevation)

YEAR 1965

	APRIL		MAY		JUNE		JULY	
	DEG	DAY	DEG	DAY	DEG	DAY	DEG	DAY
MAX	2.4	16	3.1	30	1.9	8	0.1	29
AVG	- 1.9		- 2.9		- 6.1		- 7.0	
MIN	-18.0	15	-18.8	14	-19.0	19	-31.6	19
AVG	- 7.9		- 9.3		-11.6		-17.1	

	AUGUST		SEPTEMBER		OCTOBER		NOVEMBER	
	DEG	DAY	DEG	DAY	DEG	DAY	DEG	DAY
MAX	- 3.4	1,2,3	2.1	19	- 1.2	14	3.9	25
AVG	-11.5		- 3.6		- 7.1		- 0.4	
MIN	-27.7	6	-23.3	16,17	-30.8	3	-16.4	1
AVG	-21.5		-10.7		-15.4		- 5.9	

	DECEMBER	
	DEG	DAY
MAX	3.8	5
AVG	0.1	
MIN	-11.7	14
AVG	- 6.0	

OBSERVED VALUES OF MAXIMUM, MINIMUM AND MEAN
DAILY AIR TEMPERATURE (°C)

(300 m Elevation)

YEAR 1965

APRIL

DATE	MAX	MIN	MEAN	DATE	MAX	MIN	MEAN
6	1.7	-12.1	-6.6	19	1.2	-2.2	-0.7
7	1.7	-5.8	-3.9	20	1.4	-3.6	-0.1
8	-4.3	-6.9	-5.8	21	1.0	-7.0	-2.4
9	-3.4	-9.4	-6.1	22	-0.2	-7.6	-4.0
10	-5.8	-14.7	-8.8	23	-1.8	-4.9	-3.3
11	-4.2	-15.4	-7.8	24	-2.7	-7.8	-4.7
12	-3.8	-5.1	-4.7	25	-4.7	-10.0	-6.8
13	-5.0	-12.2	-6.9	26	-3.4	-7.4	-6.2
14	-7.0	-17.2	-12.0	27	-3.5	-6.2	-5.0
15	-5.3	-18.0	-12.2	28	-2.2	-7.2	-4.7
16	2.4	-7.4	-0.6	29	-0.2	-3.7	-2.6
17	1.2	-2.2	-0.1	30	-0.2	-3.1	-2.2
18	0.5	-1.7	-0.7				

MAY

DATE	MAX	MIN	MEAN	DATE	MAX	MIN	MEAN
1	-2.0	-4.2	-2.8	17	-2.0	-6.1	-4.1
2	-2.4	-7.2	-4.4	18	-0.2	-2.0	-1.1
3	-1.2	-10.7	-4.5	19	0.4	-1.1	-0.6
4	-4.3	-14.7	-7.9	20	-0.1	-2.1	-1.1
5	-4.3	-14.7	-7.4	21	-1.3	-10.0	-6.3
6	-4.4	-8.9	-5.5	22	-1.4	-9.2	-2.8
7	-4.2	-14.7	-8.7	23	2.0	-1.8	0.2
8	-7.6	-13.4	-10.2	24	0.8	-2.2	-0.8
9	-8.0	-15.9	-11.3	25	1.4	-3.2	-1.1
10	-6.7	-9.7	-8.1	26	-2.7	-6.7	-4.1
11	-7.8	-16.4	-12.0	27	-0.4	-8.9	-5.1
12	-8.9	-16.7	-12.9	28	-5.3	-10.2	-7.4
13	-7.3	-17.3	-9.6	29	-2.9	-13.9	-7.7
14	-4.7	-18.8	-11.3	30	3.1	-3.8	-1.1
15	-3.8	-5.7	-4.8	31	-1.1	-13.1	-7.0
16	-1.9	-4.9	-2.8				

YEAR 1965

JUNE

DATE	MAX	MIN	MEAN	DATE	MAX	MIN	MEAN
1	-2.8	-13.1	-5.2	16	-8.3	-10.6	-9.5
2	-	-	-	17	-4.1	-9.4	-6.5
3	-	-	-	18	-3.8	-15.8	-9.6
4	-9.6	-12.8	-11.3	19	-15.8	-19.0	-18.1
5	-8.2	-9.8	-8.9	20	-13.1	-18.9	-17.2
6	-5.8	-10.6	-8.1	21	-13.0	-15.3	-14.0
7	-2.7	-5.3	-3.4	22	-15.3	-17.4	-16.5
8	1.9	-2.7	-0.9	23	-6.7	-16.0	-11.0
9	-	-	-	24	-6.7	-12.9	-9.9
10	-	-	-	25	-7.2	-12.8	-10.5
11	-	-	-	26	-2.4	-8.4	-4.8
12	-	-	-	27	-0.8	-5.9	-2.1
13	-	-	-	28	-2.2	-12.2	-6.4
14	-4.3	-11.4	-6.8	29	-0.4	-6.1	-2.9
15	-6.7	-14.2	-9.2	30	-2.6	-5.7	-4.2

JULY

DATE	MAX	MIN	MEAN	DATE	MAX	MIN	MEAN
1	-5.0	-14.0	-8.8	17	-10.1	-	-
2	-5.1	-17.1	-11.1	18	-	-25.5	-
3	-7.0	-19.2	-12.7	19	-12.2	-31.6	-26.2
4	-10.8	-19.3	-12.9	20	-4.5	-12.2	-7.6
5	-11.0	-21.4	-16.5	21	-11.3	-23.9	-18.2
6	-14.1	-23.1	-19.5	22	-11.7	-22.7	-13.9
7	-8.3	-21.5	-9.9	23	-4.8	-23.4	-12.7
8	-7.9	-21.8	-14.9	24	-3.3	-7.3	-5.3
9	-7.4	-19.6	-12.6	25	-3.5	-16.1	-11.1
10	-14.1	-21.3	-18.7	26	-15.3	-19.9	-17.1
11	-13.2	-21.2	-16.6	27	-2.2	-10.7	-3.9
12	-2.9	-21.4	-11.1	28	-1.1	-8.4	-3.6
13	-2.9	-6.8	-4.8	29	0.1	-5.2	-2.2
14	-1.5	-3.4	-2.2	30	-0.5	-9.8	-3.9
15	-2.4	-19.8	-13.2	31	-4.8	-7.1	-6.4
16	-11.7	-20.0	-13.5				

YEAR 1965

AUGUST

DATE	MAX	MIN	MEAN	DATE	MAX	MIN	MEAN
1	-	-	-	17	-9.4	-20.8	-15.3
2	-	-	-	18	-9.3	-20.2	-13.8
3	-	-	-	19	-5.3	-19.2	-9.1
4	-20.6	-14.2	-22.6	20	-	-	-
5	-19.3	-27.6	-23.6	21	-	-	-
6	-14.1	-27.7	-22.1	22	-	-	-
7	-17.3	-25.0	-21.4	23	-	-	-
8	-11.4	-25.2	-18.4	24	-	-	-
9	-12.7	-26.7	-16.1	25	-	-	-
10	-16.3	-27.2	-22.2	26	-	-	-
11	-19.7	-27.1	-22.8	27	-	-	-
12	-8.5	-23.8	-15.5	28	-	-	-
13	-4.6	-9.3	-6.6	29	-14.3	-18.4	-16.3
14	-4.4	-14.4	-9.3	30	-6.8	-18.3	-10.6
15	-6.8	-20.8	-14.4	31	-4.6	-8.6	-6.2
16	-13.4	-22.1	-17.4				

SEPTEMBER

DATE	MAX	MIN	MEAN	DATE	MAX	MIN	MEAN
1	-2.7	-9.9	-5.4	16	-	-	-
2	-5.0	-8.7	-6.8	17	-	-	-
3	-4.0	-13.9	-9.0	18	-0.9	-1.9	-1.4
4	-5.6	-16.4	-10.4	19	2.1	-7.2	-3.2
5	-1.7	-5.0	-3.4	20	-1.1	-4.4	-2.8
6	-1.7	-2.3	-2.2	21	0.4	-10.4	-4.2
7	-2.7	-18.3	-10.1	22	-1.6	-12.7	-5.9
8	-6.5	-23.1	-14.4	23	-2.2	-8.5	-4.2
9	-4.8	-10.6	-7.2	24	-4.1	-11.8	-7.7
10	-5.0	-17.9	-10.0	25	-4.6	-9.1	-7.6
11	-2.4	-5.7	-3.1	26	-4.8	-8.1	-6.4
12	-1.7	-2.8	-2.3	27	-3.8	-9.8	-8.0
13	-1.7	-2.8	-2.2	28	-8.9	-16.4	-12.1
14	-	-	-	29	-9.9	-19.7	-15.6
15	-	-	-	30	-8.4	-19.8	-14.2

YEAR 1965

OCTOBER

DATE	MAX	MIN	MEAN	DATE	MAX	MIN	MEAN
1	-13.1	-18.9	-16.2	17	-	-	-
2	-7.1	-25.1	-14.9	18	-	-	-
3	-17.7	-30.8	-24.7	19	-	-	-
4	-11.3	-19.4	-16.3	20	-7.8	-10.7	-9.4
5	-10.5	-21.1	-13.2	21	-10.5	-13.2	-12.1
6	-12.1	-21.1	-16.4	22	-11.9	-14.2	-13.1
7	-13.0	-18.2	-15.9	23	-4.8	-21.6	-13.6
8	-13.4	-20.8	-17.4	24	-5.6	-13.4	-8.8
9	-6.7	-13.6	-9.8	25	-2.1	-17.6	-8.9
10	-3.3	-13.6	-7.0	26	-2.9	-7.0	-4.7
11	-3.2	-6.5	-4.7	27	-4.9	-10.4	-6.6
12	-4.1	-17.6	-8.9	28	-2.8	-16.1	-10.2
13	-1.7	-20.4	-7.4	29	-1.7	-4.9	-2.7
14	-1.2	-4.4	-2.9	30	-4.7	-6.7	-5.8
15	-	-	-	31	-6.3	-13.9	-11.5
16	-	-	-				

NOVEMBER

DATE	MAX	MIN	MEAN	DATE	MAX	MIN	MEAN
1	-0.3	-16.4	-1.7	16	-	-	-
2	-0.7	-2.3	-1.7	17	-0.3	-2.2	-0.9
3	-2.3	-3.3	-2.9	18	-2.1	-4.4	-2.2
4	-3.3	-3.9	-3.7	19	1.7	-10.6	-2.7
5	-3.2	-3.8	-3.7	20	1.8	-3.9	-1.3
6	-2.7	-4.5	-2.9	21	3.4	-3.0	-1.2
7	-2.8	-4.5	-3.6	22	0.5	-2.1	-0.7
8	-1.3	-3.9	-2.5	23	3.8	-6.7	-1.7
9	-2.2	-4.9	-3.5	24	3.6	-3.5	-1.3
10	-3.6	-9.0	-6.9	25	3.9	-6.8	-3.1
11	-0.7	-10.4	-7.2	26	-0.1	-7.3	-4.8
12	-	-	-	27	-4.1	-7.2	-5.6
13	-	-	-	28	-0.8	-9.7	-4.7
14	-	-	-	29	-1.3	-6.0	-4.1
15	-	-	-	30	-0.7	-7.7	-5.1

YEAR 1965

DECEMBER

DATE	MAX	MIN	MEAN	DATE	MAX	MIN	MEAN
1	-1.3	-6.2	-3.7	17	2.2	-8.4	-3.3
2	-3.1	-6.7	-5.0	18	0.9	-4.7	-3.3
3	-0.8	-4.9	-3.1	19	-2.1	-6.8	-4.5
4	0.2	-4.4	-1.8	20	-2.2	-5.9	-4.7
5	3.8	-9.2	-2.6	21	-0.4	-8.4	-4.0
6	1.1	-8.1	-4.6	22	-2.2	-6.6	-3.9
7	0.6	-7.0	-4.9	23	2.0	-4.3	-1.9
8	0.0	-5.7	-3.6	24	-0.4	-4.4	-3.0
9	-1.2	-5.4	-3.8	25	1.1	-4.9	-3.1
10	2.8	-5.4	-2.6	26	-2.2	-5.1	-3.7
11	0.3	-7.3	-3.7	27	0.3	-4.1	-2.3
12	-2.1	-9.5	-5.1	28	-1.6	-3.3	-2.7
13	-0.6	-5.2	-3.8	29	2.9	-8.7	-1.7
14	0.7	-11.7	-5.6	30	1.5	-1.3	-0.8
15	-0.6	-4.9	-1.8	31	0.7	-1.7	-0.7
16	2.9	-6.2	-2.1				

TEMPERATURE

MONTHLY AVERAGES

AVERAGE AIR TEMPERATURE (°C)

YEAR 1966

JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
2.3	0.5	0.0	-2.3	-4.3	-5.6	-13.8	-9.6	-7.5	-4.5	-1.3	0.4

Mean: -3.8

AVERAGE AND EXTREMES OF MAXIMUM AND MINIMUM DAILY AIR TEMPERATURE (°C)

YEAR 1966

	JANUARY		FEBRUARY		MARCH		APRIL	
	DEG	DAY	DEG	DAY	DEG	DAY	DEG	DAY
MAX	6.7	30	6.1	12	6.7	7	7.4	1
AVG	4.3		2.7		2.3		-0.1	
MIN	-2.3	7	-4.2	25	-5.7	19	-10.1	23
AVG	-0.5		-1.3		-2.0		-4.5	

	MAY		JUNE		JULY		AUGUST	
	DEG	DAY	DEG	DAY	DEG	DAY	DEG	DAY
MAX	3.4	5	2.8	21	2.6	30	2.3	6
AVG	-2.2		-3.3		-9.6		-3.7	
MIN	-12.3	1	-14.1	15	-29.5	16	-28.4	17
AVG	-6.7		-8.4		-19.0		-14.9	

	SEPTEMBER		OCTOBER		NOVEMBER		DECEMBER	
	DEG	DAY	DEG	DAY	DEG	DAY	DEG	DAY
MAX	3.2	26	5.6	25	9.0	22	5.9	20
AVG	-3.4		-0.9		2.9		2.6	
MIN	-27.1	8	-22.7	6	-10.5	6	-7.4	12
AVG	-12.1		-8.2		-4.2		-2.1	

OBSERVED VALUES OF MAXIMUM, MINIMUM AND MEAN
DAILY AIR TEMPERATURE (°C)

YEAR 1966

JANUARY

DATE	MAX	MIN	MEAN
1	4.3	2.4	3.0
2	4.5	1.8	3.4
3	4.6	-0.1	2.6
4	5.7	0.0	2.7
5	2.6	-0.8	1.0
6	2.3	-1.8	-0.5
7	1.9	-2.3	0.1
8	1.8	-1.8	0.0
9	6.4	3.3	4.9
30	6.7	3.3	4.6
31	6.1	2.5	4.1

FEBRUARY

DATE	MAX	MIN	MEAN	DATE	MAX	MIN	MEAN
1	2.7	-1.2	0.8	15	3.6	-0.6	0.7
2	1.1	-3.9	-1.5	16	3.1	-0.8	0.8
3	3.9	-1.5	1.0	17	2.8	-1.7	0.5
4	5.3	-1.1	1.5	18	3.3	-2.2	0.9
5	5.0	-0.6	2.2	19	1.1	-1.1	-0.4
6	3.3	-1.9	0.6	20	0.6	-1.7	-0.8
7	2.8	-0.6	0.9	21	0.0	-3.6	-1.5
8	1.4	-1.1	0.0	22	2.5	-1.4	0.3
9	2.2	0.0	0.8	23	0.8	-2.5	-0.6
10	3.1	0.3	1.1	24	1.7	-2.8	-1.1
11	2.8	0.0	1.0	25	1.1	-4.2	-1.8
12	6.1	1.7	3.8	26	0.6	-1.9	-1.0
13	4.7	0.6	2.9	27	1.4	-2.2	-0.8
14	4.4	0.6	2.4	28	2.8	-1.4	0.1

YEAR 1966

MARCH

DATE	MAX	MIN	MEAN	DATE	MAX	MIN	MEAN
1	2.0	-0.4	0.7	17	4.8	-2.2	1.2
2	3.1	-1.1	0.5	18	-0.7	-4.4	-2.1
3	4.4	-0.1	2.3	19	0.6	-5.7	-3.3
4	4.2	1.1	2.6	20	-0.3	-5.5	-2.8
5	5.1	1.7	3.3	21	0.2	-4.4	-2.3
6	3.2	0.6	1.1	22	-0.7	-4.0	-3.1
7	6.7	-1.7	2.8	23	-1.8	-4.4	-3.4
8	4.0	-0.5	2.8	24	-1.2	-4.5	-3.2
9	1.1	-1.2	-0.2	25	0.8	-5.2	-2.6
10	1.9	-1.4	-0.3	26	-0.2	-3.3	-1.3
11	4.8	-0.7	1.2	27	-0.1	-2.3	-1.9
12	4.1	1.1	2.6	28	5.9	-5.0	-0.1
13	3.4	-0.1	2.6	29	2.2	-0.8	0.4
14	0.5	-2.7	-0.8	30	5.5	0.4	2.7
15	0.2	-2.6	-1.5	31	3.0	-0.8	0.4
16	4.2	-1.8	1.5				

APRIL

DATE	MAX	MIN	MEAN	DATE	MAX	MIN	MEAN
1	7.4	1.1	4.4	16	-5.4	-8.3	-6.7
2	5.7	-1.1	1.7	17	-6.0	-9.8	-7.2
3	3.9	-0.2	1.7	18	-6.4	-7.8	-7.1
4	7.2	0.8	3.4	19	-1.1	-6.6	-3.9
5	3.9	0.5	2.2	20	-0.8	-4.4	-2.8
6	5.1	-0.8	2.3	21	0.6	-5.1	-1.8
7	6.0	0.9	2.9	22	-4.6	-8.9	-6.6
8	4.4	1.1	2.6	23	-2.8	-10.1	-5.7
9	2.1	-1.2	0.7	24	-2.1	-6.6	-3.7
10	0.3	-3.6	-2.7	25	-0.8	-3.3	-2.1
11	1.1	-3.3	-2.1	26	-2.6	-6.1	-4.0
12	0.3	-1.1	-0.2	27	-5.2	-7.2	-6.0
13	-0.8	-5.6	-2.2	28	-3.8	-6.0	-5.0
14	-4.9	-7.8	-6.6	29	1.7	-7.8	-5.6
15	-4.4	-7.2	-5.8	30	1.2	-9.4	-3.8

YEAR 1966

MAY

DATE	MAX	MIN	MEAN	DATE	MAX	MIN	MEAN
1	-6.2	-12.3	-9.1	17	-4.8	-7.2	-5.8
2	1.3	-9.4	-2.2	18	-3.3	-7.8	-5.4
3	0.7	-2.2	-1.1	19	-3.3	-6.2	-5.1
4	1.7	-2.9	-1.4	20	-6.0	-10.1	-7.2
5	3.4	-1.3	0.5	21	-3.5	-11.1	-8.5
6	0.1	-3.3	-1.7	22	0.2	-6.4	-2.8
7	2.9	-1.9	1.1	23	-0.3	-3.6	-2.3
8	2.8	-1.1	0.5	24	-1.1	-5.7	-3.8
9	0.6	-4.3	-2.0	25	-2.7	-8.6	-5.3
10	1.7	-5.0	-2.4	26	-2.3	-5.6	-3.7
11	0.0	-5.8	-3.4	27	-2.5	-5.9	-4.3
12	-3.9	-7.9	-5.9	28	-4.4	-6.9	-5.3
13	-7.2	-9.8	-7.9	29	-4.7	-7.6	-6.1
14	-7.3	-11.2	-9.9	30	-4.7	-9.2	-6.5
15	-3.8	-9.4	-6.3	31	-6.7	-9.0	-7.8
16	-3.6	-7.6	-5.3				

JUNE

DATE	MAX	MIN	MEAN	DATE	MAX	MIN	MEAN
1	-8.3	-11.7	-10.3	16	-5.7	-7.8	-6.9
2	-3.9	-10.0	-6.5	17	-4.6	-12.3	-7.3
3	-4.4	-3.8	-5.8	18	0.1	-12.3	-4.1
4	-4.1	-5.6	-4.7	19	0.8	-6.2	-2.4
5	-3.8	-10.1	-5.9	20	-0.4	-7.9	-3.9
6	-5.2	-13.2	-7.6	21	2.8	-4.0	0.0
7	-6.7	-14.0	-11.4	22	1.8	-4.6	-2.2
8	-2.7	-6.8	-4.2	23	0.3	-3.9	-1.4
9	-2.3	-4.7	-3.3	24	1.2	-1.8	-0.3
10	-3.3	-8.4	-5.8	25	0.7	-4.7	-1.8
11	-7.1	-12.2	-8.7	26	-0.4	-5.4	-3.3
12	-8.6	-13.4	-10.5	27	0.4	-3.9	-1.6
13	-8.8	-13.1	-10.2	28	-2.7	-5.7	-3.9
14	-9.3	-12.6	-10.6	29	-4.6	-9.1	-6.8
15	-7.5	-14.1	-11.6	30	-1.4	-8.9	-6.1

YEAR 1966

JULY

DATE	MAX	MIN	MEAN	DATE	MAX	MIN	MEAN
1	-1.6	-6.7	-3.9	17	-12.4	-24.2	-18.7
2	-6.5	-8.4	-7.7	18	0.2	-15.4	-4.6
3	-6.9	-13.0	-10.1	19	-0.1	-25.1	-15.1
4	-8.9	-13.3	-10.7	20	-7.3	-20.6	-13.0
5	-10.0	-18.6	-13.1	21	-14.4	-24.7	-22.7
6	-16.3	-20.1	-17.9	22	-22.6	-29.0	-25.5
7	-6.1	-20.0	-14.0	23	-20.6	-27.3	-23.8
8	-10.0	-17.8	-13.9	24	-16.8	-24.6	-21.9
9	-8.1	-20.1	-15.3	25	-8.7	-18.4	-14.4
10	-16.1	-19.6	-18.4	26	-5.3	-10.1	-6.9
11	-19.3	-24.7	-22.3	27	-6.6	-12.2	-9.4
12	-18.8	-23.1	-20.8	28	1.2	-13.8	-7.4
13	-18.3	-23.4	-20.9	29	0.1	-1.3	-1.1
14	-8.3	-18.3	-12.2	30	2.8	-3.3	-0.2
15	-9.6	-25.8	-16.8	31	2.6	-2.3	-0.2
16	-23.8	-29.5	-26.7				

AUGUST

DATE	MAX	MIN	MEAN	DATE	MAX	MIN	MEAN
1	-0.6	-5.6	-2.3	17	-1.1	-28.4	-14.8
2	-5.3	-10.0	-7.2	18	-0.1	-20.1	-8.4
3	-6.6	-18.1	-13.1	19	-3.6	-18.9	-10.8
4	-3.9	-10.2	-5.4	20	-1.5	-12.8	-5.9
5	-0.4	-8.8	-5.2	21	-2.6	-9.0	-5.5
6	2.3	-1.4	0.5	22	1.5	-8.5	-3.7
7	0.8	-13.2	-6.2	23	2.3	-3.1	0.7
8	-6.6	-23.4	-14.3	24	0.2	-7.2	-3.6
9	-13.7	-25.6	-19.7	25	-6.5	-12.4	-7.8
10	-0.9	-18.9	-7.6	26	-10.4	-18.4	-14.1
11	-2.9	-24.6	-18.3	27	-13.1	-20.2	-17.2
12	-8.1	-23.4	-17.1	28	-10.9	-18.4	-14.9
13	-9.1	-23.0	-18.0	29	-3.6	-14.4	-9.6
14	-1.6	-14.4	-6.3	30	-0.3	-5.6	-3.1
15	-0.1	-12.8	-5.2	31	-1.7	-9.4	-6.1
16	-6.4	-22.9	-12.3				

YEAR 1966

SEPTEMBER

DATE	MAX	MIN	MEAN	DATE	MAX	MIN	MEAN
1	0.2	-7.3	-2.8	16	-1.0	-9.1	-4.9
2	0.1	-6.2	-2.8	17	1.2	-2.0	-0.5
3	-3.9	-14.6	-8.2	18	0.7	-4.3	-2.3
4	-5.6	-14.2	-10.3	19	0.6	-4.3	-2.3
5	-5.6	-17.7	-14.1	20	1.6	-3.4	-1.2
6	-3.2	-16.1	-13.0	21	2.6	-1.7	0.6
7	-14.9	-26.4	-21.9	22	2.2	-5.4	-0.8
8	-4.8	-27.1	-17.1	23	-1.8	-8.7	-5.7
9	-4.5	-13.8	-7.6	24	-0.7	-6.1	-3.2
10	-5.7	-16.7	-12.0	25	2.7	-6.6	-0.8
11	-3.4	-15.2	-8.1	26	3.2	-1.1	1.2
12	-5.1	-15.6	-9.3	27	-0.1	-13.2	-5.6
13	-15.3	-21.1	-19.0	28	-8.2	-15.5	-12.2
14	-13.8	-22.4	-18.8	29	-10.3	-17.9	-14.4
15	-6.8	-18.6	-13.3	30	-1.6	-13.3	-7.8

OCTOBER

DATE	MAX	MIN	MEAN	DATE	MAX	MIN	MEAN
1	-1.1	-4.7	-2.9	17	-1.6	-8.3	-4.1
2	-0.8	-2.9	-1.7	18	-2.2	-9.7	-7.2
3	0.6	-1.3	-0.3	19	-2.1	-14.4	-6.7
4	0.6	-8.9	-0.9	20	-2.6	-16.6	-10.2
5	-6.5	-13.4	-9.7	21	0.5	-4.2	-2.6
6	-6.4	-22.7	-13.2	22	-0.5	-6.1	-3.1
7	-1.8	-12.3	-7.4	23	-2.2	-10.3	-6.7
8	-5.2	-13.6	-7.6	24	3.8	-6.7	0.3
9	-11.8	-17.2	-14.2	25	5.6	-1.1	1.4
10	-1.6	-17.8	-10.3	26	2.7	-4.3	0.7
11	2.6	-1.8	0.2	27	1.1	-4.0	-2.2
12	2.0	-3.8	-1.3	28	0.9	-4.1	-1.9
13	-1.1	-5.5	-3.2	29	2.9	-0.7	0.6
14	-0.2	-6.2	-3.4	30	3.7	-1.8	0.9
15	-6.1	-14.5	-11.1	31	-0.1	-4.6	-2.4
16	-1.2	-15.4	-7.1				

YEAR 1966

NOVEMBER

DATE	MAX	MIN	MEAN	DATE	MAX	MIN	MEAN
1	0.2	-6.2	-2.6	16	0.7	-8.8	-3.7
2	2.5	-3.2	-1.2	17	1.3	-9.9	-4.6
3	0.9	-6.6	-2.9	18	5.7	-1.3	1.2
4	2.3	-9.9	-4.7	19	4.3	-4.9	0.7
5	0.7	-6.2	-3.1	20	3.9	-0.9	0.5
6	1.2	-10.5	-5.0	21	6.4	0.0	2.1
7	-0.4	-8.2	-4.6	22	9.0	1.1	4.2
8	3.9	-5.1	-2.2	23	4.9	0.2	2.3
9	4.9	-5.1	-1.9	24	7.9	-1.8	2.5
10	-0.1	-9.9	-4.0	25	4.6	2.8	3.6
11	2.1	-2.9	-1.2	26	4.8	1.1	3.1
12	0.7	-3.3	-1.9	27	3.6	-0.2	1.0
13	-0.1	-5.8	-3.8	28	3.3	-1.4	0.5
14	-0.2	-9.2	-3.9	29	4.9	-3.2	0.7
15	1.2	-5.7	-2.7	30	1.8	-1.7	-0.2

DECEMBER

DATE	MAX	MIN	MEAN	DATE	MAX	MIN	MEAN
1	1.2	-1.1	-0.2	17	1.4	-1.8	-0.5
2	0.5	-1.8	-0.8	18	3.3	-4.1	-0.4
3	2.7	-2.1	0.1	19	5.0	-5.0	-0.5
4	1.6	-3.3	0.8	20	5.9	0.6	3.3
5	2.3	-6.2	0.0	21	2.4	-0.1	0.6
6	2.1	-1.1	0.0	22	5.4	-0.8	1.4
7	3.4	-1.1	1.2	23	1.6	-0.4	0.5
8	2.3	-3.6	-0.7	24	5.4	-0.2	1.4
9	1.8	-2.2	-0.7	25	3.2	-3.2	0.3
10	0.1	-3.7	-1.6	26	3.6	0.1	1.6
11	1.2	-6.1	-2.4	27	3.0	0.0	1.1
12	0.0	-7.4	-3.4	28	2.9	-0.1	1.3
13	0.6	-2.8	-1.3	29	3.4	-0.2	1.6
14	2.5	-2.7	0.0	30	3.9	-1.1	0.8
15	2.3	-3.9	-0.7	31	4.3	-1.8	1.1
16	2.4	-2.4	-0.4				

PRESSURE

BAROMETRIC PRESSURE (P) (in mb)

YEAR 1966

	JANUARY (P)	DAY	FEBRUARY (P)	DAY	MARCH (P)	DAY	APRIL (P)	DAY
MAX	992.2	9	1005.8	11	1009.5	1	1007.6	3
AVG	985.4		991.8		984.5		988.2	
MIN	974.3	20,30	968.1	14	953.9	17	961.2	21

	MAY (P)	DAY	JUNE (P)	DAY	JULY (P)	DAY	AUGUST (P)	DAY
MAX	1004.2	21	1013.9	12	1016.1	25	1011.6	20
AVG	985.2		992.0		994.4		986.9	
MIN	957.0	2	966.5	23	963.9	15	950.2	15

	SEPTEMBER (P)	DAY	OCTOBER (P)	DAY	NOVEMBER (P)	DAY	DECEMBER (P)	DAY
MAX	1021.8	19	1006.9	27	1009.0	21	1005.4	21
AVG	989.8		986.1		993.7		989.3	
MIN	939.2	4	959.4	12	973.9	3	968.8	12

FREQUENCY OF PRESSURE
(by 10 mb)

(P)	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1020-1029									12			
1010-1019						15	43	4	47			
1000-1009		27	30	32	12	51	40	34	28	40	37	15
990- 999	80	106	46	91	88	72	67	63	40	78	126	127
980- 989	84	77	85	74	67	50	61	82	17	53	68	56
970- 979	79	7	66	23	35	39	35	45	44	31	9	48
960- 969		3	11	9	30	10	2	10	35	44		2
950- 959			6		3			10	12	2		
940- 949									5			
TOTAL OBS	243	220	244	229	235	237	248	248	240	248	240	248

CLOUD COVER

TOTAL CLOUD AMOUNT OCCURRENCES BY TENTHS

YEAR 1966

SCALE 0-10	0	1	2	3	4	5	6	7	8	9	10	TOT OBS	AVG COVER
JAN*	0	1	2	3	3	3	3	3	10	11	30	69	8.10
FEB*	11	7	2	4	0	2	1	3	1	4	48	81	7.20
MAR	0	3	1	2	8	1	6	3	9	11	124	168	9.02
APR	8	2	2	3	5	8	3	2	6	11	103	153	8.39
MAY	11	1	1	5	12	6	1	3	4	8	83	135	7.83
JUN	11	2	7	5	3	4	5	2	3	2	115	159	8.17
JUL	12	6	12	8	3	4	2	11	2	7	102	169	7.54
AUG*	14	10	3	7	6	1	5	5	8	10	131	200	7.97
SEP	5	5	6	5	6	3	2	2	4	8	114	160	8.38
OCT	3	1	3	2	4	5	4	1	4	3	145	175	9.10
NOV	7	7	1	3	3	4	3	2	3	8	109	151	8.40
DEC	7	7	2	1	3	1	1	5	4	6	117	154	8.62
										TOTAL OBS		1774	
										ANNUAL AVERAGE COVER			8.23

* As above

OCCURRENCE OF CEILING HEIGHT

Insufficient data for table compilation

WIND

MEAN MONTHLY WIND SPEED

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	AVG
Kts	4.9	3.0	6.4	7.1	9.3	8.1	5.9	8.9	7.8	8.4	5.8	5.0	6.7
M/s	2.5	1.5	3.3	3.6	4.7	4.1	3.0	4.6	4.0	4.5	3.0	2.6	3.4

PRECIPITATION AND FOG

NUMBER OF OBSERVATIONS WITH OCCURRENCE OF WEATHER

YEAR 1966

	JAN*	FEB*	MAR	APR	MAY	JUN	JUL	AUG*	SEP	OCT	NOV	DEC
Rain and Drizzle/ Freezing Rain and Drizzle	6	5	16	24	1	3	1	3	3	1	7	8
Sleet	0	0	0	1	0	0	0	2	0	0	0	1
Snow	2	4	30	31	34	40	60	65	34	71	35	41
Fog and Ice Fog	0	4	1	17	6	7	19	20	21	12	13	15
Blowing and drifting Snow	0	0	0	1	13	33	13	25	17	13	1	0

* JAN: Missing days 11-28 due personnel changeover
* FEB: Total of 84 observations only were taken
* AUG: Includes 8 observations per day 6-16 due aircraft activities

NUMBER OF DAYS WITH RAIN AND DRIZZLE/FREEZING RAIN AND DRIZZLE

JAN*	FEB*	MAR	APR	MAY	JUN	JUL	AUG*	SEP	OCT	NOV	DEC
3	3	9	13	1	2	1	1	1	1	4	4

NUMBER OF DAYS WITH SNOW AND SLEET

JAN*	FEB*	MAR	APR	MAY	JUN	JUL	AUG*	SEP	OCT	NOV	DEC
1	2	20	15	14	17	18	20	17	24	16	15

* As above
' Hail $\frac{1}{4}$ inch diameter at one observation early August 7

TOTAL MONTHLY PRECIPITATION (cm)

JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
-	1.5	2.8	6.2	1.6	3.1	1.7	2.1	2.3	2.6	3.4	2.8

Annulal Total: 30.1

YEAR 1966

THREE-HOURLY OBSERVATIONS OF WIND SPEED (10 m) AND TEMPERATURE

GIVING

NUMBER OF OBSERVATIONS WITH OCCURRENCE OF WIND SPEED

AND TEMPERATURE

YEAR 1966

JANUARY

TEMP °C	WIND SPEED (m/sec)				TOTAL	TEMP °F
	0.0-2.5	2.6-7.5	7.6-12.9	13.0 -		
4.5/ 7.2		5	4		9	40/44
1.7/ 4.4	15	16	10		41	35/39
-1.1/ 1.6	20	10	1		31	30/34
-3.8/ -1.2		2			2	25/29
	35	33	25		83	

FEBRUARY

TEMP °C	WIND SPEED (m/sec)				TOTAL	TEMP °F
	0.0-2.5	2.6-7.5	7.6-12.9	13.0 -		
1.7/ 4.4	18	2	1		21	35/39
-1.1/ 1.6	33	1			34	30/34
-3.8/ -1.2	2				2	25/29
	53	3	1		57	

MARCH

TEMP °C	WIND SPEED (m/sec)				TOTAL	TEMP °F
	0.0-2.5	2.6-7.5	7.6-12.9	13.0 -		
4.5/ 7.2			2		2	40/44
1.7/ 4.4	26	32	15		73	35/39
-1.1/ 1.6	55	27	4	2	88	30/34
-3.8/ -1.2	46	25	3		74	25/29
-6.6/ -3.9	5	3			8	20/24
	132	87	24	2	245	

YEAR 1966

APRIL

TEMP °C	WIND SPEED (m/sec)				TOTAL	TEMP °F
	0.0-2.5	2.6-7.5	7.6-12.9	13.0 -		
4.5/ 7.2		1	2	5	8	40/44
1.7/ 4.4	10	20	7	5	42	35/39
-1.1/ 1.6	3	30	6	1	40	30/34
-3.8/ -1.2	24	27	3		54	25/29
-6.6/ -3.9	34	31	2		67	20/24
-9.4/ -6.7	13	13	1		27	15/19
	84	122	21	11	238	

MAY

TEMP °C	WIND SPEED (m/sec)				TOTAL	TEMP °F
	0.0-2.5	2.6-7.5	7.6-12.9	13.0 -		
1.7/ 4.4	2		1	3	6	35/39
-1.1/ 1.6	8	21	5	5	39	30/34
-3.8/ -1.2	21	26	12	3	62	25/29
-6.6/ -3.9	26	50	11		87	20/24
-9.4/ -6.7	4	39	1		44	15/19
-12.2/ -9.5	3	5			8	10/14
	64	141	30	11	246	

JUNE

TEMP °C	WIND SPEED (m/sec)				TOTAL	TEMP °F
	0.0-2.5	2.6-7.5	7.6-12.9	13.0 -		
-1.1/ 1.6	2	6	12	15	35	30/34
-3.8/ -1.2	17	16	11	5	49	25/29
-6.6/ -3.9	55	10		2	67	20/24
-9.4/ -6.7	33	9	1	1	44	15/19
-12.2/ -9.5	27	11	1		39	10/14
-15.0/-12.3	3	3			6	05/09
	137	55	25	23	240	

YEAR 1966

JULY

TEMP °C	WIND SPEED (m/sec)				TOTAL	TEMP °F
	0.0-2.5	2.6-7.5	7.6-12.9	13.0 -		
1.7/ 4.4		1	1		2	35/39
-1.1/ 1.6	3	12	5	2	22	30/34
-3.8/ -1.2	5	2	2	2	11	25/29
-6.6/ -3.9	7	1	2	1	11	20/24
-9.4/ -6.7	14	8	2	4	28	15/19
-12.2/ -9.5	23	13	1	2	39	10/14
-15.0/-12.3	9	11		1	21	05/09
-18.7/-15.1	14	5			19	00/04
-21.0/-18.8	27	9			36	-05/01
-23.8/-21.1	32	2			34	-10/06
-26.6/-23.9	17	4			21	-15/11
-29.4/-26.7	3	1			4	-20/16
	154	69	13	12	248	

AUGUST

TEMP °C	WIND SPEED (m/sec)				TOTAL	TEMP °F
	0.0-2.5	2.6-7.5	7.6-12.9	13.0 -		
1.7/ 4.4				1	1	35/39
-1.1/ 1.6	1	4	4	6	15	30/34
-3.8/ -1.2	12	11	6	2	31	25/29
-6.6/ -3.9	13	14	4	1	32	20/24
-9.4/ -6.7	16	8	2	2	28	15/19
-12.2/ -9.5	10	6	4	1	21	10/14
-15.0/-12.3	22	2	2	1	27	05/09
-18.7/-15.1	18	2	1		21	00/04
-21.0/-18.8	3	5	3		11	-05/01
-23.8/-21.1	4	7	1		12	-10/06
-26.6/-23.9	2	1	1		4	-15/11
-29.4/-26.7		2			2	-20/16
	101	62	28	14	205	

YEAR 1966

SEPTEMBER

TEMP °C	WIND SPEED (m/sec)				TOTAL	TEMP °F
	0.0-2.5	2.6-7.5	7.6-12.9	13.0 -		
1.7/ 4.4	1	1	3	1	6	35/39
-1.1/ 1.6	15	27	1	2	45	30/34
-3.8/ -1.2	17	6	2	1	26	25/29
-6.6/ -3.9	12	11	3	4	30	20/24
-9.4/ -6.7	11	7	3		21	15/19
-12.2/ -9.5	20	4			24	10/14
-15.0/-12.3	14	3	4	3	24	05/09
-18.7/-15.1	13	3	1	2	19	00/04
-21.0/-18.8	3	7			10	-05/01
-23.8/-21.1	5				5	-10/06
-26.6/-23.9	3	3			6	-15/11
	114	72	17	13	216	

OCTOBER

TEMP °C	WIND SPEED (m/sec)				TOTAL	TEMP °F
	0.0-2.5	2.6-7.5	7.6-12.9	13.0 -		
1.7/ 4.4	4	3	3	1	11	35/39
-1.1/ 1.6	16	21	15	7	59	30/34
-3.8/ -1.2	27	38	15	1	81	25/29
-6.6/ -3.9	13	14	1	1	29	20/24
-9.4/ -6.7	16	7			23	15/19
-12.2/ -9.5	12	5			17	10/14
-15.0/-12.3	16	4			20	05/09
-18.7/-15.1	8				8	00/04
	112	92	34	10	248	

YEAR 1966

NOVEMBER

TEMP °C	WIND SPEED (m/sec)				TOTAL	TEMP °F
	0.0-2.5	2.6-7.5	7.6-12.9	13.0 -		
7.3/ 9.9				1	1	45/49
4.5/ 7.2		4	1		5	40/44
1.7/ 4.4	17	17	12	2	48	35/39
-1.1/ 1.6	48	20			68	30/34
-3.8/ -1.2	50	18	6		74	25/29
-6.6/ -3.9	17	11	2		30	20/24
-9.4/ -6.7	12	2			14	15/19
	144	72	21	3	240	

DECEMBER

TEMP °C	WIND SPEED (m/sec)				TOTAL	TEMP °F
	0.0-2.5	2.6-7.5	7.6-12.9	13.0 -		
4.5/ 7.2		1	2	1	4	40/44
1.7/ 4.4	31	10	4	2	47	35/39
-1.1/ 1.6	109	30	3		142	30/34
-3.8/ -1.2	35	9	3		47	25/29
-6.6/ -3.9	6	2			8	20/24
	181	52	12	3	248	

YEAR 1966

THREE-HOURLY OBSERVATIONS OF WIND SPEED (10 m)

GIVING

NUMBER OF OBSERVATIONS WITH OCCURRENCE OF WIND SPEED

AND DIRECTION

JANUARY 1966

m/sec	0-2.0	2.1-4.0	4.1-6.6	6.7-9.7	9.8-12.8	12.9-16.4	16.5-20.0	20.1-24.1	24.2-25.7	Freq %	Mean Speed Kts	Mean Speed m/sec	Total Obs
Knots	0-3	4-7	8-12	13-18	19-24	25-31	32-38	39-46	47-50				
N		4	3	7	6					8.6	14.5	7.5	20
NNE			1	2	4	1				3.2	19.4	10.0	8
NE	1	2	2	1	1					2.8	10.0	5.1	7
ENE	2	5	1	2	1					4.4	8.5	4.4	11
E	2	4								2.4	4.3	2.2	6
ESE	10	8	2							8.1	4.2	2.2	20
SE	16	5								8.5	2.8	1.4	21
SSE	7	1	1							3.6	3.3	1.7	9
S	8	3	1							4.8	3.5	1.8	12
SSW	6	3								3.6	3.2	1.6	9
SW	8	9	2							7.7	4.5	2.3	19
WSW	7	4								4.4	3.4	1.7	11
W	9	3	1							5.2	3.4	1.7	13
WNW	11	3	1							6.0	3.2	1.6	15
NW	9	2								4.4	2.6	1.3	11
NNW	5	1	1	2						3.6	6.3	3.2	9
	101	57	16	14	12	1			CALM	18.9		TOTAL OBS	47 / 248
%	40.7	23.0	6.4	5.6	4.8	0.4							

FEBRUARY 1966

m/sec	0-2.0	2.1-4.0	4.1-6.6	6.7-9.7	9.8-12.8	12.9-16.4	16.5-20.0	20.1-24.1	24.2-25.7	Freq %	Mean Speed Kts	Mean Speed m/sec	Total Obs
Knots	0-3	4-7	8-12	13-18	19-24	25-31	32-38	39-46	47-50				
N	6	1	2	1	2					18.2	6.2	3.2	12
NNE										0	0	0	0
NE										0	0	0	0
ENE	1		1							3.0	6.0	3.1	2
E										0	0	0	0
ESE										0	0	0	0
SE		1								1.5	5.5	2.8	1
SSE	1	2								4.5	4.3	2.2	3
S	6	1								10.6	2.5	1.3	7
SSW										0	0	0	0
SW	1									1.5	2.0	1.0	1
WSW	1	1								3.0	3.7	1.9	2
W	1	1								3.0	3.7	1.9	2
WNW	5	1								9.1	2.6	1.3	6
NW										0	0	0	0
NNW	2	1								4.5	3.2	1.6	3
	24	9	3	1	2				CALM	40.9			27
												TOTAL OBS	66
%	36.4	13.6	4.5	1.5	3.0								

MARCH 1966

m/sec	0-2.0	2.1-4.0	4.1-6.6	6.7-9.7	9.8-12.8	12.9-16.4	16.5-20.0	20.1-24.1	24.2-25.7	Freq %	Mean Speed Kts	Mean Speed m/sec	Total Obs
Knots	0-3	4-7	8-12	13-18	19-24	25-31	32-38	39-46	47-50				
N	7	6	11	4	5	1				13.9	10.4	5.3	34
NNE	11	12	2	2	1	1				11.8	6.5	3.3	29
NE	7	5	3	1	5					8.6	9.3	4.8	21
ENE	8	4	1	2						6.1	5.3	2.7	15
E	8	4	2	2						6.5	5.6	2.9	16
ESE	4	5	2	2						5.3	6.6	3.4	13
SE	4	4								3.3	3.7	1.9	8
SSE	2	2								1.6	3.7	1.9	4
S	1	6	1							3.3	5.6	2.9	8
SSW	4	4	1	2						4.5	6.4	3.3	11
SW	2	2	1	2						2.8	8.0	4.1	7
WSW	3	3								2.4	3.7	1.9	6
W			1							0.4	10.0	5.1	1
WNW	1	2	2	1						2.4	8.1	4.2	6
NW	4	5	1	1						4.5	5.5	2.8	11
NNW	9	4	2	1						6.5	4.7	2.4	16
	75	68	30	20	11	2			CALM	15.9		TOTAL OBS	39 / 245
%	30.6	27.7	12.2	8.2	4.5	0.8							

APRIL 1966

m/sec	0-2.0	2.1-4.0	4.1-6.6	6.7-9.7	9.8-12.8	12.9-16.4	16.5-20.0	20.1-24.1	24.2-25.7	Freq %	Mean Speed Kts	Mean Speed m/sec	Total Obs
Knots	0-3	4-7	8-12	13-18	19-24	25-31	32-38	39-46	47-50				
N	6	5	5	7	4	5	1	1		15.0	11.6	6.0	34
NNE	8	4	1	1	1	4				8.1	10.4	5.4	19
NE	2	2	1							2.1	5.0	2.6	5
ENE	3	3	1							3.0	4.6	2.4	7
E	1	3								1.7	4.6	2.4	4
ESE	3	7	2							5.1	5.4	2.8	12
SE	3	3	3	1						3.9	6.4	3.3	9
SSE	5	5	6							6.9	6.1	3.1	16
S	2	5	15	2						10.3	8.8	4.5	24
SSW	10	10	6	5						13.3	6.8	3.5	31
SW	6	4	2	3						6.4	6.7	3.4	15
WSW	5	1	1							3.0	3.6	1.8	7
W										0	0	0	0
WNW		1	3	2						2.5	11.1	5.7	6
NW	2	4	5	2						5.6	8.2	4.2	13
NNW	3	3	10	2	1					8.1	9.2	4.7	19
	59	60	60	25	6	9	1	1	CALM	4.7			11
												TOTAL OBS	232
%	25.4	25.8	25.8	10.8	2.6	3.9	0.4	0.4					

MAY 1966

m/sec	0-2.0	2.1-4.0	4.1-6.6	6.7-9.7	9.8-12.8	12.9-16.4	16.5-20.0	20.1-24.1	24.2-25.7	Freq %	Mean Speed Kts	Mean Speed m/sec	Total Obs
Knots	0-3	4-7	8-12	13-18	19-24	25-31	32-38	39-46	47-50				
N	5	7	13	14	4	6	1			20.2	13.7	7.0	50
NNE	8	12	15	13	3	2				21.4	10.4	5.3	53
NE	5	7	3	2	2					7.7	8.0	4.1	19
ENE	3	9	8	3	1	1	1			10.5	10.2	5.2	26
E	4	3	3	4	1					6.0	9.2	4.7	15
ESE	2	5	3	1						4.4	7.0	3.7	11
SE	2	6	3	1						4.8	6.9	3.5	12
SSE	1	3	1							2.0	5.7	2.9	5
S	4	3	4	2						5.2	7.3	3.7	13
SSW	1	6	5							4.8	7.1	3.6	12
SW		2	2							1.6	7.7	4.0	4
WSW	1		1							0.8	6.0	3.1	2
W	1									0.4	2.0	1.0	1
WNW	1									0.4	2.0	1.0	1
NW	1	1								0.8	3.7	1.9	2
NNW	3	5	4	2						5.6	7.5	3.9	14
	42	69	65	42	11	9	2		CALM	3.2			8
												TOTAL OBS	248
%	16.9	27.8	26.2	16.9	4.4	3.6	0.8						

JUNE 1966

m/sec	0-2.0	2.1-4.0	4.1-6.6	6.7-9.7	9.8-12.8	12.9-16.4	16.5-20.0	20.1-24.1	24.2-25.7	Freq %	Mean Speed Kts	Mean Speed m/sec	Total Obs
Knots	0-3	4-7	8-12	13-18	19-24	25-31	32-38	39-46	47-50				
N	13	2		11	5	9	5	2		19.6	17.6	9.1	47
NNE	9	13	5	7		1	2			15.4	9.3	4.8	37
NE	6	8	5	3	2	1		1		10.8	10.0	5.1	26
ENE	6	5		2						5.4	5.4	2.8	13
E	3	4								2.9	4.0	2.1	7
ESE	5	3								3.3	3.3	1.7	8
SE	6									2.5	2.0	1.0	6
SSE	1	4	1							2.5	5.7	2.9	6
S		1								0.4	5.5	2.8	1
SSW	1	1								0.8	3.8	1.9	2
SW	5									2.1	2.0	1.0	5
WSW	3	2								2.1	3.4	1.7	5
W		2	1							1.2	7.0	3.6	3
WNW	5	2	1							3.3	3.9	2.0	8
NW	7	2	4	2	1					6.7	7.3	3.7	16
NNW	8		1	2			1	1		5.4	10.3	5.3	13
	78	49	18	27	8	11	8	4	CALM	15.4			37
												TOTAL OBS	240
%	32.5	20.4	7.5	11.2	3.3	4.6	3.3	1.7					

JULY 1966

m/sec	0-2.0	2.1-4.0	4.1-6.6	6.7-9.7	9.8-12.8	12.9-16.4	16.5-20.0	20.1-24.1	24.2-25.7	Freq %	Mean Speed Kts	Mean Speed m/sec	Total Obs
Knots	0-3	4-7	8-12	13-18	19-24	25-31	32-38	39-46	47-50				
N	7	7	1	1	3	3				9.0	10.3	5.3	22
NNE	11	4	2	3	2	4		1		11.0	11.4	5.9	27
NE	6	3	1		1					4.5	5.4	2.8	11
ENE	10	1	2	1						5.7	3.6	1.8	14
E	12	3	2							6.9	3.0	1.5	17
ESE	8	4	3							6.1	4.5	2.3	15
SE	6	1	1	1						3.6	4.8	2.5	9
SSE	5	5	1							4.5	4.3	2.2	11
S	7	4								4.5	3.3	1.7	11
SSW	4	3	1							3.3	3.1	1.6	8
SW		3	2							2.0	7.3	3.7	5
WSW	1	2	4							2.8	7.6	3.9	7
W	4	3	2							3.6	4.9	2.5	9
WNW	4	3	1		1	1				4.1	7.4	3.8	10
NW	5	2	4			1				4.9	7.4	3.8	12
NNW	2	6	2		3	1				5.7	10.7	5.5	14
	92	54	29	6	10	10		1	CALM	17.5			43
												TOTAL OBS	245
%	37.5	22.0	11.8	2.4	4.1	4.1		0.4					

AUGUST 1966

m/sec	0-2.0	2.1-4.0	4.1-6.6	6.7-9.7	9.8-12.8	12.9-16.4	16.5-20.0	20.1-24.1	24.2-25.7	Freq %	Mean Speed Kts	Mean Speed m/sec	Total Obs
Knots	0-3	4-7	8-12	13-18	19-24	25-31	32-38	39-46	47-50				
N	3		1	1	3	2	1	1		6.9	19.1	9.8	12
NNE	6	1		2	1					5.7	7.0	3.6	10
NE	4	1	1		1					4.0	6.4	3.3	7
ENE	4	1	1							3.4	3.9	2.0	6
E	5	1								3.4	2.6	1.3	6
ESE	3	1		2						3.4	7.1	3.6	6
SE	2	5								4.0	4.5	2.3	7
SSE		1								0.6	5.5	2.8	1
S		1								0.6	5.5	2.8	1
SSW	2	1	4	1						4.6	8.1	4.2	8
SW	1	3	6	2	1					7.4	9.3	4.8	13
WSW	1	1	3	1	1					4.0	10.6	5.4	7
W	3	1	2							3.4	5.2	2.7	6
WNW	1	3	4	2	2					6.9	10.2	5.2	12
NW	1	3	3	4	4	1	2			10.3	15.8	8.1	18
NNW	2	1	1	4	3	5	2			10.3	19.7	10.1	18
	38	25	26	19	16	8	5	1	CALM	20.7			36
												TOTAL OBS	174
%	21.8	14.4	14.9	10.9	9.2	4.6	2.9	0.6					

SEPTEMBER 1966

m/sec	0-2.0	2.1-4.0	4.1-6.6	6.7-9.7	9.8-12.8	12.9-16.4	16.5-20.0	20.1-24.1	24.2-25.7	Freq %	Mean Speed Kts	Mean Speed m/sec	Total Obs
Knots	0-3	4-7	8-12	13-18	19-24	25-31	32-38	39-46	47-50				
N	8	9	1	4	1					10.6	6.9	3.5	23
NNE	6	2	3	3	3	2	2	2		10.6	16.3	8.4	23
NE	4	2	3			2	1			5.5	11.7	6.0	12
ENE	6	1	1	1	2	1				5.5	9.5	4.9	12
E	5	2	1	2	1					5.1	7.6	3.9	11
ESE	7	2								4.1	2.8	1.4	9
SE	9	7	3	1		1	1			10.1	7.5	3.9	22
SSE	3	4								3.2	4.0	2.1	7
S	2	1	3							2.8	6.5	3.3	6
SSW	1	2	1							1.8	5.7	2.9	4
SW	4	4	1							4.1	4.4	2.3	9
WSW	2	1	1							1.8	4.9	2.5	4
W	4	4	2							4.6	5.0	2.6	10
WNW	3	7	3							6.0	5.7	2.9	13
NW	4	6	3	2	1					7.4	7.7	4.0	16
NNW	6	6	5	3	2	1				10.6	9.2	4.7	23
	74	60	31	16	10	7	4	2	CALM	6.0			13
												TOTAL OBS	217
%	34.1	27.6	14.3	7.4	4.6	3.2	1.8	0.9					

OCTOBER 1966

m/sec	0-2.0	2.1-4.0	4.1-6.6	6.7-9.7	9.8-12.8	12.9-16.4	16.5-20.0	20.1-24.1	24.2-25.7	Freq %	Mean Speed Kts	Mean Speed m/sec	Total Obs
Knots	0-3	4-7	8-12	13-18	19-24	25-31	32-38	39-46	47-50				
N	8	5	6	3	11	1				13.7	12.2	6.3	34
NNE	3	1	1	2	5	8	1			8.5	19.9	10.2	21
NE	4	2	1	2		1				4.0	8.8	4.5	10
ENE	4	2	2	4	1					5.2	9.4	4.8	13
E	4	8	3	1						6.4	6.1	3.1	16
ESE	4	2	1							2.8	4.1	2.1	7
SE	4	6								4.0	4.1	2.1	10
SSE	7	2	1							4.0	3.5	1.8	10
S	3	4		1						3.2	5.4	2.8	8
SSW	6	3	1							4.0	3.8	1.9	10
SW	5	1	2	1						3.6	5.7	2.9	9
WSW	7	2	3	2						5.6	6.1	3.1	14
W	2	6	3	2	1					5.6	8.5	4.4	14
WNW	2	7	2	1						4.8	6.5	3.3	12
NW	2	6	2	2						4.8	7.3	3.7	12
NNW	8	18	6	4	3					15.7	7.7	4.0	39
	73	75	34	25	21	10	1		CALM	3.6			9
												TOTAL OBS	248
%	29.4	30.2	13.7	10.1	8.5	4.0	0.4						

NOVEMBER 1966

m/sec	0-2.0	2.1-4.0	4.1-6.6	6.7-9.7	9.8-12.8	12.9-16.4	16.5-20.0	20.1-24.1	24.2-25.7	Freq %	Mean Speed Kts	Mean Speed m/sec	Total Obs
Knots	0-3	4-7	8-12	13-18	19-24	25-31	32-38	39-46	47-50				
N	9	4	5	2	4	1				10.4	9.4	4.8	25
NNE	2	2	1	2	3	2				5.0	14.7	7.6	12
NE	2			6	2					4.2	14.0	7.2	10
ENE	1		3	1						2.1	9.5	4.9	5
E	7	6	6	2						8.7	6.6	3.4	21
ESE	10	6	2							7.5	4.0	2.1	18
SE	10	13	3							10.8	4.7	2.4	26
SSE	11	9	3							9.6	4.4	2.3	23
S	8	2								4.2	2.7	1.4	10
SSW	7	1	2		1					4.6	5.5	2.8	11
SW	6	1	2	1	1					4.6	6.8	3.5	11
WSW	4	3								2.9	3.5	1.8	7
W	7									2.9	2.0	1.0	7
WNW	7	2								3.7	2.8	1.4	9
NW	4		2							2.5	4.7	2.4	6
NNW	10	6	1							7.1	3.7	1.9	17
	105	55	30	14	11	3			CALM	9.2			22
												TOTAL OBS	240
%	43.7	22.9	12.5	5.8	4.6	1.2							

DECEMBER 1966

m/sec	0-2.0	2.1-4.0	4.1-6.6	6.7-9.7	9.8-12.8	12.9-16.4	16.5-20.0	20.1-24.1	24.2-25.7	Freq %	Mean Speed Kts	Mean Speed m/sec	Total Obs
Knots	0-3	4-7	8-12	13-18	19-24	25-31	32-38	39-46	47-50				
N	5	2	3	1	1					4.8	7.3	3.7	12
NNE	1	1	2	5	1	3				5.2	16.2	8.3	13
NE	1	1	5	1						3.2	9.1	4.7	8
ENE	2	1	1	2	1					2.8	10.3	5.3	7
E	4	4	2							4.0	5.0	2.6	10
ESE	5	6	1							4.8	4.4	2.3	12
SE	9	7	1							6.8	3.9	2.0	17
SSE	14	3								6.8	2.6	1.3	17
S	8	2								4.0	2.7	1.4	10
SSW	11	1								4.8	2.3	1.2	12
SW	4	5								3.6	3.9	2.0	9
WSW	11	4	1							6.4	3.4	1.7	16
W	16	5	2							9.3	3.4	1.7	23
WNW	11	6	1	1						7.7	4.2	2.2	19
NW	18	3	1							8.9	2.8	1.4	22
NNW	23	6	1							12.1	3.0	1.5	30
	143	57	21	10	3	3			CALM	4.4			11
												TOTAL OBS	248
%	57.7	23.0	8.5	4.0	1.2	1.2							

MEAN: 1966 (Jan-Dec)

m/sec	0-2.0	2.1-4.0	4.1-6.6	6.7-9.7	9.8-12.8	12.9-16.4	16.5-20.0	20.1-24.1	24.2-25.7	Freq %	Mean Speed Kts	Mean Speed m/sec	Total Obs
Knots	0-3	4-7	8-12	13-18	19-24	25-31	32-38	39-46	47-50				
N	77	52	51	56	49	28	8	4		12.2	12.6	6.5	325
NNE	65	52	33	42	24	28	5	3		9.5	11.9	6.1	252
NE	42	33	25	16	14	4	1	1		5.1	9.2	4.7	136
ENE	50	32	22	18	6	2	1			4.9	7.6	3.9	131
E	55	42	19	11	2					4.8	5.8	3.0	129
ESE	61	49	16	5						4.9	4.8	2.5	131
SE	71	58	13	4		1	1			5.6	4.8	2.5	148
SSE	57	41	14							4.2	4.3	2.2	112
S	49	33	24	5						4.2	5.4	2.8	111
SSW	53	35	21	8	1					4.4	5.5	2.8	118
SW	42	34	20	9	2					4.0	6.1	3.1	107
WSW	46	24	14	3	1					3.3	4.9	2.5	88
W	47	25	14	2	1					3.3	4.8	2.5	89
WNW	51	37	18	7	3	1				4.4	5.0	2.6	117
NW	57	34	25	13	6	2	2			5.2	6.4	3.3	139
NNW	81	57	34	20	12	7	3	1		8.1	7.3	3.7	215
	904	638	363	219	121	73	21	9	CALM	11.4			303
												TOTAL OBS	2651
%	34.0	24.1	13.7	8.3	4.6	2.7	0.8	0.3					

AVERAGES AND EXTREMES OF MAXIMUM AND
MINIMUM DAILY AIR TEMPERATURE (°C)

(300 m Elevation)

YEAR 1966

	JANUARY		FEBRUARY		MARCH		APRIL	
	DEG	DAY	DEG	DAY	DEG	DAY	DEG	DAY
MAX	7.6	4	5.8	5	2.8	7	5.0	3
AVG	1.2		1.4		- 0.6		- 2.2	
MIN	- 7.0	7	-10.0	21	-14.4	19	-18.9	17
AVG	- 3.1		- 4.7		- 5.7		- 7.8	

	MAY		JUNE		JULY		AUGUST	
	DEG	DAY	DEG	DAY	DEG	DAY	DEG	DAY
MAX	0.3	5	- 0.6	21,22	- 1.1	31	0.6	6
AVG	- 5.3		- 4.8		-11.0		- 5.6	
MIN	-18.1	14	-22.2	7	-33.6	16	-27.8	17
AVG	-10.0		-12.3		-21.3		-14.6	

	SEPTEMBER		OCTOBER		NOVEMBER		DECEMBER	
	DEG	DAY	DEG	DAY	DEG	DAY	DEG	DAY
MAX	0.0	26	2.5	25	6.7	22	5.6	27
AVG	- 5.3		- 3.1		0.2		1.6	
MIN	-24.4	14	-19.7	16	-16.1	17	-12.8	12
AVG	-13.0		-10.4		- 6.7		- 4.6	

OBSERVED VALUES OF MAXIMUM, MINIMUM AND MEAN
DAILY AIR TEMPERATURE (°C)

(300 m Elevation)

YEAR 1966

JANUARY

DATE	MAX	MIN	MEAN	DATE	MAX	MIN	MEAN
1	0.9	-1.6	-0.5	5	0.1	-3.3	-1.6
2	1.2	-0.8	0.3	6	-0.8	-5.2	-3.9
3	1.2	-0.9	0.3	7	1.9	-7.0	-2.7
4	7.6	-1.5	0.8	8	-2.4	-4.9	-4.1

FEBRUARY

DATE	MAX	MIN	MEAN	DATE	MAX	MIN	MEAN
1	-	-	-	15	-	-	-
2	-	-	-	16	-0.8	-2.8	-2.0
3	3.1	0.0	1.8	17	2.5	-4.4	-2.1
4	5.3	-3.3	0.2	18	4.2	-6.7	-1.7
5	5.8	-4.2	0.3	19	-1.9	-4.4	-3.6
6	2.5	-5.3	-1.5	20	-0.8	-5.0	-3.6
7	-0.6	-3.9	-1.7	21	-1.1	-10.0	-4.7
8	1.7	-3.6	-2.3	22	-0.3	-4.7	-2.8
9	5.3	-1.9	0.2	23	-1.4	-8.3	-3.8
10	1.4	-1.7	-0.7	24	0.6	-9.4	-5.1
11	1.1	-1.1	-0.2	25	0.6	-9.7	-5.5
12	3.1	0.8	1.8	26	-0.3	-5.8	-3.7
13	-	-	-	27	0.8	-7.5	-3.9
14	-	-	-	28	1.9	-5.0	-2.8

YEAR 1966

MARCH

DATE	MAX	MIN	MEAN	DATE	MAX	MIN	MEAN
1	-0.8	-4.4	-2.8	17	0.0	-4.7	-1.9
2	0.6	-6.1	-2.5	18	-4.7	-11.7	-6.3
3	3.9	-0.8	0.8	19	-3.9	-14.4	-9.4
4	3.3	-0.6	1.0	20	-4.4	-13.3	-8.5
5	1.7	0.0	0.8	21	-2.0	-8.6	-5.5
6	1.1	-3.1	-0.3	22	-3.6	-7.8	-6.3
7	2.8	-3.1	0.0	23	-3.1	-8.8	-6.5
8	1.1	-2.2	0.1	24	-3.9	-10.6	-6.9
9	1.1	-4.7	-3.4	25	-3.9	-10.6	-7.2
10	-0.6	-5.8	-3.2	26	-2.8	-8.9	-4.4
11	1.1	-4.4	-0.8	27	-2.8	-8.9	-5.0
12	0.8	-0.6	0.0	28	2.5	-10.6	-2.6
13	0.6	-2.2	-0.1	29	0.0	-2.2	-1.4
14	-2.2	-5.3	-3.8	30	1.9	-1.7	0.2
15	-3.3	-6.1	-4.9	31	1.4	-2.2	-0.8
16	-0.3	-3.6	-1.5				

APRIL

DATE	MAX	MIN	MEAN	DATE	MAX	MIN	MEAN
1	3.9	0.0	2.8	16	-8.3	-16.1	-11.1
2	3.3	-5.0	-0.4	17	-9.7	-18.9	-11.3
3	5.0	-3.3	1.7	18	-9.4	-12.2	-10.4
4	4.7	0.0	2.5	19	-3.6	-9.4	-6.2
5	1.7	-1.1	0.0	20	-3.9	-6.4	-5.2
6	2.2	-4.4	0.3	21	-3.1	-8.1	-4.9
7	4.4	0.6	1.8	22	-8.1	-15.8	-10.8
8	2.5	-0.6	0.5	23	-5.0	-17.5	-8.1
9	0.0	-2.8	-0.8	24	-3.3	-11.1	-6.2
10	-1.1	-6.7	-5.0	25	-2.8	-5.3	-4.2
11	-0.6	-5.6	-3.7	26	-5.0	-8.6	-6.8
12	-1.1	-2.5	-1.3	27	-5.6	-11.1	-8.7
13	-2.5	-7.8	-4.1	28	-4.2	-8.6	-6.6
14	-7.8	-11.9	-9.3	29	-0.3	-13.1	-6.8
15	-7.8	-11.1	-9.3	30	-1.1	-10.6	-5.7

YEAR 1966

MAY

DATE	MAX	MIN	MEAN	DATE	MAX	MIN	MEAN
1	-9.4	-11.1	-10.3	17	-8.3	-13.3	-10.3
2	-0.8	-11.1	-3.9	18	-5.8	-13.6	-8.7
3	-1.1	-3.3	-2.6	19	-5.8	-9.7	-8.3
4	-0.6	-6.1	-2.6	20	-9.4	-15.0	-11.4
5	0.3	-3.9	-1.3	21	-7.2	-18.1	-12.0
6	-2.5	-6.7	-3.8	22	-3.1	-7.8	-5.3
7	0.3	-5.0	-1.1	23	-3.6	-5.0	-4.4
8	0.0	-3.3	-1.6	24	-4.7	-11.1	-8.0
9	-1.7	-9.7	-4.1	25	-5.0	-15.0	-8.8
10	-1.1	-6.1	-3.5	26	-5.8	-8.3	-6.9
11	-3.3	-6.1	-4.1	27	-6.4	-8.9	-7.5
12	-	-	-	28	-7.2	-9.7	-8.2
13	-10.6	-17.8	-13.6	29	-8.3	-14.4	-10.3
14	-10.8	-18.1	-15.1	30	-8.9	-16.7	-11.9
15	-5.6	-13.9	-8.8	31	-9.4	-11.1	-10.2
16	-3.9	-12.2	-8.4				

JUNE

DATE	MAX	MIN	MEAN	DATE	MAX	MIN	MEAN
1	-11.1	-20.0	-15.9	16	-4.2	-9.4	-7.2
2	-6.7	-16.1	-9.3	17	-6.7	-16.7	-11.8
3	-	-	-	18	-1.7	-16.1	-5.6
4	-	-	-	19	-1.4	-11.1	-4.2
5	-	-	-	20	-2.2	-12.5	-6.2
6	-	-	-	21	-0.6	-6.7	-2.2
7	-6.7	-22.2	-12.6	22	-0.6	-6.9	-4.6
8	-2.5	-7.2	-4.7	23	-2.2	-6.7	-3.2
9	-2.8	-8.3	-5.3	24	-1.9	-4.4	-3.0
10	-5.3	-10.8	-8.2	25	-2.2	-6.7	-4.2
11	-9.4	-19.4	-11.9	26	-2.2	-7.8	-4.8
12	-10.6	-20.3	-14.4	27	-2.2	-5.6	-4.1
13	-8.9	-16.1	-12.4	28	-5.6	-8.3	-6.7
14	-10.8	-18.3	-15.1	29	-7.8	-16.1	-11.2
15	-4.2	-18.3	-13.3	30	-4.4	-11.1	-8.4

YEAR 1966

JULY

DATE	MAX	MIN	MEAN	DATE	MAX	MIN	MEAN
1	-5.0	-8.9	-6.4	17	-11.1	-27.5	-18.0
2	-8.9	-11.7	-10.5	18	-2.2	-16.7	-5.9
3	-10.6	-20.8	-16.9	19	-1.9	-31.1	-17.7
4	-12.2	-20.3	-13.3	20	-8.6	-17.2	-13.1
5	-13.1	-18.0	-18.1	21	-16.1	-26.4	-24.3
6	-20.3	-26.7	-23.1	22	-26.4	-31.9	-29.4
7	-8.3	-26.7	-16.0	23	-22.8	-28.9	-26.4
8	-13.6	-22.8	-16.9	24	-22.8	-30.0	-26.4
9	-11.1	-23.9	-17.2	25	-10.8	-23.6	-17.1
10	-18.9	-23.3	-21.6	26	-7.5	-10.8	-8.7
11	-23.3	-32.8	-28.6	27	-7.8	-15.0	-11.6
12	-23.3	-30.6	-27.3	28	-1.4	-14.4	-6.2
13	-18.9	-30.6	-27.0	29	-2.2	-2.8	-2.4
14	-10.8	-18.9	-13.1	30	-1.4	-6.7	-3.3
15	-11.7	-27.8	-19.1	31	-1.1	-3.9	-2.1
16	-23.9	-33.6	-29.3				

AUGUST

DATE	MAX	MIN	MEAN	DATE	MAX	MIN	MEAN
1	-3.6	-6.7	-4.3	17	-5.8	-27.8	-20.4
2	-	-	-	18	-2.8	-15.6	-8.1
3	-	-	-	19	-9.4	-16.9	-11.8
4	-	-	-	20	-5.6	-12.2	-8.9
5	-2.8	-10.6	-5.2	21	-5.0	-13.1	-7.1
6	0.6	-3.1	-0.9	22	-1.9	-13.9	-5.3
7	-	-	-	23	-0.6	-4.7	-2.6
8	-	-	-	24	-1.4	-6.7	-4.6
9	-	-	-	25	-6.7	-17.2	-9.5
10	-	-	-	26	-14.2	-20.0	-16.3
11	-	-	-	27	-9.4	-20.0	-17.1
12	-	-	-	28	-15.6	-23.3	-19.3
13	-	-	-	29	-6.4	-22.2	-12.9
14	-	-	-	30	-3.6	-7.5	-5.4
15	-2.8	-15.3	-7.4	31	-5.8	-15.0	-10.8
16	-9.4	-20.0	-13.8				

SEPTEMBER

DATE	MAX	MIN	MEAN	DATE	MAX	MIN	MEAN
1	-4.4	-14.2	-7.2	16	-3.6	-11.9	-7.2
2	-3.6	-12.5	-7.1	17	-1.1	-3.9	-2.2
3	-5.6	-18.3	-10.5	18	-0.6	-3.9	-1.9
4	-7.5	-16.1	-11.5	19	-0.6	-7.2	-3.3
5	-8.6	-21.4	-16.3	20	-0.8	-6.1	-3.4
6	-7.2	-9.4	-8.2	21	-0.6	-2.8	-1.4
7	-	-	-	22	-0.8	-8.3	-3.2
8	-9.2	-16.7	-11.7	23	-1.7	-10.6	-5.7
9	-8.9	-17.5	-11.7	24	-1.7	-4.4	-3.0
10	-9.2	-19.4	-13.6	25	-0.8	-3.9	-1.8
11	-7.5	-16.9	-10.4	26	0.0	-2.8	-1.2
12	-8.9	-16.1	-11.7	27	-2.5	-18.3	-7.8
13	-16.1	-22.8	-20.7	28	-7.5	-18.3	-12.7
14	-16.1	-24.4	-20.7	29	-7.5	-17.8	-12.8
15	-10.6	-20.8	-15.8	30	-1.1	-11.9	-6.1

OCTOBER

DATE	MAX	MIN	MEAN	DATE	MAX	MIN	MEAN
1	-2.8	-6.7	-4.7	17	-4.4	-11.1	-7.3
2	-1.9	-5.0	-3.4	18	-4.4	-12.2	-8.5
3	-1.4	-3.1	-2.2	19	-3.9	-16.4	-8.8
4	-1.1	-10.3	-2.9	20	-3.9	-18.3	-10.2
5	-8.3	-16.9	-11.7	21	-3.1	-5.8	-4.5
6	-6.7	-17.8	-13.0	22	-3.3	-7.8	-5.7
7	-5.3	-16.1	-9.4	23	-2.2	-19.4	-8.9
8	-6.1	-16.7	-10.3	24	-0.6	-7.8	-2.2
9	-13.9	-23.1	-17.6	25	2.5	-3.1	-0.8
10	-3.9	-17.8	-10.2	26	-0.3	-4.4	-1.8
11	-0.6	-3.9	-2.1	27	-0.6	-5.0	-3.3
12	-1.1	-5.8	-4.0	28	-0.6	-6.7	-2.5
13	-3.3	-8.1	-6.0	29	1.1	-1.7	-0.4
14	-3.9	-8.9	-6.1	30	0.8	-3.3	-0.8
15	-7.8	-15.0	-12.5	31	-1.4	-5.3	-3.6
16	-3.3	-19.7	-8.3				

YEAR 1966

NOVEMBER

DATE	MAX	MIN	MEAN	DATE	MAX	MIN	MEAN
1	-2.2	-11.7	-5.1	16	0.6	-13.3	-7.9
2	-0.6	-4.4	-2.8	17	0.0	-16.1	-7.2
3	-2.5	-8.1	-5.1	18	1.4	-3.1	-0.7
4	-2.2	-14.4	-7.9	19	3.1	-6.1	-0.9
5	-1.7	-9.4	-5.6	20	2.2	-2.2	0.0
6	-1.1	-12.8	-7.2	21	4.2	0.0	1.7
7	-3.1	-12.2	-6.6	22	6.7	-0.3	3.1
8	-2.2	-6.1	-4.3	23	3.3	0.0	1.9
9	-2.5	-10.0	-4.6	24	5.0	-3.3	1.6
10	-1.4	-12.8	-5.9	25	2.2	0.6	1.4
11	0.6	-5.6	-2.8	26	2.8	0.6	1.6
12	-2.2	-5.3	-4.5	27	5.3	-1.7	0.4
13	-3.6	-7.8	-5.8	28	6.4	-2.2	0.9
14	-2.5	-14.4	-6.2	29	3.9	-5.6	-0.8
15	-3.3	-8.3	-5.6	30	1.7	-3.3	-1.5

DECEMBER

DATE	MAX	MIN	MEAN	DATE	MAX	MIN	MEAN
1	-0.6	-3.1	-2.3	17	-1.7	-4.4	-3.4
2	0.3	-3.9	-2.2	18	5.0	-9.2	-1.9
3	1.4	-4.7	-2.1	19	2.8	-6.7	-1.4
4	2.5	-9.4	-2.6	20	4.4	-0.6	1.8
5	-1.4	-3.9	-2.6	21	4.7	-1.4	0.6
6	-0.6	-3.3	-2.3	22	3.6	-1.7	1.0
7	0.6	-2.8	-1.0	23	-1.1	-2.8	-1.8
8	-1.1	-8.3	-3.2	24	3.9	-1.7	0.9
9	0.0	-5.6	-3.1	25	3.1	-0.6	1.2
10	0.3	-5.3	-3.6	26	4.2	-0.6	1.2
11	1.1	-11.7	-5.6	27	5.6	-0.8	1.3
12	-1.4	-12.8	-6.1	28	1.9	-1.7	-0.3
13	-0.3	-4.4	-3.2	29	2.5	-1.7	-0.1
14	0.8	-6.4	-3.2	30	3.9	-2.2	-0.4
15	2.2	-10.3	-4.1	31	1.4	-6.1	-2.4
16	0.8	-5.6	-3.1				

TEMPERATURE

MONTHLY AVERAGES

AVERAGE AIR TEMPERATURE (°C)

YEAR 1967

JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
0.2	-0.1	-0.2	-1.0	-5.4	-4.9	-5.9	-5.9	-6.2	-4.8	-1.3	1.3

Mean: -2.8

AVERAGES AND EXTREMES OF MAXIMUM AND MINIMUM DAILY AIR TEMPERATURE (°C)

YEAR 1967

	JANUARY		FEBRUARY		MARCH		APRIL	
	DEG	DAY	DEG	DAY	DEG	DAY	DEG	DAY
MAX	5.0	6,7,26	6.7	9	6.1	5	4.4	13,14
AVG	2.2		1.9		1.3		0.4	
MIN	-5.0	16	-7.2	22	-6.1	26	-7.2	23
AVG	-2.0		-2.5		-2.4		-2.8	

	MAY		JUNE		JULY		AUGUST	
	DEG	DAY	DEG	DAY	DEG	DAY	DEG	DAY
MAX	4.4	1	3.3	27	1.1	20	2.2	27,28
AVG	-4.0		-2.6		-3.1		-3.4	
MIN	-13.9	27	-17.8	18	-16.1	6	-18.3	23
AVG	-7.1		-7.4		-8.9		-8.7	

	SEPTEMBER		OCTOBER		NOVEMBER		DECEMBER	
	DEG	DAY	DEG	DAY	DEG	DAY	DEG	DAY
MAX	2.8	11	3.9	19	5.0	20	7.2	11,19
AVG	-3.0		-0.9		1.1		3.5	
MIN	-21.1	18	-18.9	6	-9.4	14	-4.4	2,3,4
AVG	-9.6		-8.9		-3.9		-1.2	

OBSERVED VALUES OF MAXIMUM, MINIMUM AND MEAN
DAILY AIR TEMPERATURES (°C)

YEAR 1967

JANUARY

DATE	MAX	MIN	MEAN	DATE	MAX	MIN	MEAN
1	3.3	-1.7	1.1	17	2.8	-1.1	1.1
2	3.3	-2.8	0.6	18	2.2	-1.1	0.6
3	2.8	-3.3	0.0	19	1.1	-2.2	-0.6
4	2.2	-2.8	0.0	20	1.1	-3.3	-1.1
5	3.9	-1.1	1.7	21	0.0	-3.3	-1.7
6	5.0	-1.7	1.7	22	2.2	-2.2	0.0
7	5.0	-2.2	1.7	23	3.9	0.0	2.2
8	0.0	-3.9	-1.7	24	4.4	0.6	2.8
9	-1.1	-3.3	-2.2	25	3.3	0.0	1.7
10	0.0	-3.3	-1.7	26	5.0	0.6	2.8
11	-0.6	-3.3	-1.7	27	4.4	0.0	2.2
12	1.1	-2.8	-0.6	28	3.3	0.0	1.7
13	2.2	-2.2	0.0	29	3.3	-1.1	0.0
14	1.7	-2.2	0.0	30	1.7	-1.7	0.0
15	2.2	-4.4	-1.1	31	2.2	-1.1	0.6
16	-0.6	-5.0	-2.8				

FEBRUARY

DATE	MAX	MIN	MEAN	DATE	MAX	MIN	MEAN
1	1.1	-2.8	-0.6	15	-0.6	-2.2	-1.1
2	3.9	-2.2	1.1	16	3.3	-2.8	0.6
3	6.1	-0.6	2.8	17	4.4	0.6	2.8
4	0.6	-3.3	-1.1	18	4.4	-3.3	0.6
5	-0.6	-2.8	-1.7	19	0.0	-1.7	-0.6
6	-1.7	-3.3	-2.2	20	3.3	-2.8	0.6
7	-0.6	-2.2	-1.1	21	-2.2	-4.4	-3.3
8	4.4	-1.1	1.7	22	0.0	-7.2	-3.3
9	6.7	1.1	3.9	23	2.2	-5.6	-1.7
10	4.4	0.6	2.8	24	0.6	-5.0	-2.2
11	5.6	0.0	2.8	25	0.6	-5.0	-2.2
12	3.3	-0.6	1.7	26	1.7	-5.0	-1.7
13	-0.6	-2.2	-1.1	27	2.2	-0.6	1.1
14	0.0	-2.2	-1.1	28	-	-	-

YEAR 1967

MARCH

DATE	MAX	MIN	MEAN	DATE	MAX	MIN	MEAN
1	1.1	-2.2	-0.6	17	0.0	-1.1	-0.6
2	1.1	-2.2	-0.6	18	2.8	-3.3	0.0
3	1.1	-1.7	0.0	19	2.2	-3.3	-0.6
4	4.4	0.0	2.2	20	-1.1	-3.3	-2.2
5	6.1	0.0	3.3	21	-2.2	-5.0	-3.3
6	1.1	0.0	0.6	22	2.2	-1.1	0.6
7	0.6	-4.4	-1.7	23	2.2	-1.1	0.6
8	2.2	0.6	1.7	24	0.6	-2.8	-1.1
9	2.8	-3.3	0.0	25	0.6	-3.3	-1.1
10	1.1	-3.3	-1.1	26	3.9	-6.1	-1.1
11	1.1	-3.3	-1.1	27	-0.6	-5.0	-2.8
12	-1.7	-4.4	-2.8	28	1.1	-5.0	-1.7
13	1.1	-1.7	0.0	29	3.3	0.0	1.7
14	4.4	-0.6	2.2	30	2.2	-1.7	0.6
15	5.6	0.0	2.8	31	1.1	-3.3	-1.1
16	1.7	-1.1	0.6				

APRIL

DATE	MAX	MIN	MEAN	DATE	MAX	MIN	MEAN
1	-0.6	-4.4	-2.2	16	2.2	0.0	1.1
2	-1.1	-4.4	-2.8	17	2.8	-0.6	1.1
3	-0.6	-5.6	-2.8	18	2.8	0.0	1.7
4	-1.1	-2.2	-1.7	19	2.2	-1.1	0.6
5	-0.6	-4.4	-2.2	20	1.1	-2.2	-0.6
6	-2.8	-4.4	-3.3	21	-1.7	-3.9	-2.8
7	0.0	-4.4	-1.7	22	-2.2	-5.0	-3.3
8	1.1	-1.1	0.0	23	-3.3	-7.2	-5.0
9	0.0	-2.2	-1.1	24	-0.6	-5.6	-2.8
10	0.0	-0.6	0.0	25	1.1	-6.1	-2.2
11	-4.4	-5.0	-4.4	26	1.1	-0.6	0.6
12	3.3	-2.8	0.6	27	0.0	-2.8	-1.1
13	4.4	-1.1	1.7	28	0.0	-2.2	-1.1
14	4.4	0.0	2.2	29	1.7	-3.3	-0.6
15	3.9	0.0	2.2	30	0.6	-0.6	0.0

YEAR 1967

MAY

DATE	MAX	MIN	MEAN	DATE	MAX	MIN	MEAN
1	4.4	-0.6	2.2	17	-3.3	-6.7	-5.0
2	1.1	-2.2	-0.6	18	-4.4	-8.9	-6.7
3	-1.1	-5.6	-3.3	19	-5.0	-8.9	-6.7
4	-3.9	-7.8	-5.6	20	-5.0	-8.9	-6.7
5	-2.2	-6.1	-3.9	21	-4.4	-6.7	-5.6
6	0.0	-3.3	-1.7	22	-3.9	-6.1	-5.0
7	0.0	-7.2	-3.3	23	-5.0	-7.8	-6.1
8	-1.1	-6.7	-3.9	24	-5.6	-10.0	-7.8
9	0.0	-2.2	-1.1	25	-7.8	-10.0	-8.9
10	-1.1	-5.0	-2.8	26	-9.4	-12.8	-11.1
11	-5.0	-8.9	-6.7	27	-11.7	-13.9	-12.8
12	-8.3	-11.1	-9.4	28	-8.9	-13.3	-11.1
13	-9.4	-11.1	-10.0	29	-8.9	-11.7	-10.0
14	1.7	-10.6	-4.4	30	-4.4	-10.0	-7.2
15	2.2	0.0	1.1	31	-2.2	-4.4	-3.3
16	0.6	-3.3	-1.1				

JUNE

DATE	MAX	MIN	MEAN	DATE	MAX	MIN	MEAN
1	-3.3	-6.1	-4.4	16	-7.2	-8.9	-7.8
2	0.6	-6.1	-2.8	17	-8.9	-17.2	-12.8
3	-1.1	-3.3	-2.2	18	-4.4	-17.8	-11.1
4	-1.7	-5.6	-3.3	19	0.0	-4.4	-2.2
5	-5.0	-7.8	-6.1	20	1.1	-3.3	1.1
6	-6.7	-9.4	-7.8	21	2.2	-3.3	0.6
7	-7.8	-11.7	-9.4	22	-1.1	-5.6	-3.3
8	-6.7	-12.8	-9.4	23	0.6	-4.4	-1.7
9	-8.9	-13.3	-11.1	24	1.1	-2.8	-0.6
10	-8.3	-11.7	-10.0	25	2.2	-2.2	0.0
11	-3.9	-7.2	-5.6	26	2.2	-0.6	1.1
12	-1.7	-3.9	-2.8	27	3.3	1.1	2.2
13	-1.7	-13.9	-7.8	28	0.0	-6.7	-3.3
14	-10.6	-16.1	-13.3	29	1.7	-3.3	-0.6
15	-6.7	-13.9	-10.0	30	1.7	-1.1	0.6

YEAR 1967

JULY

DATE	MAX	MIN	MEAN	DATE	MAX	MIN	MEAN
1	-1.1	-5.0	-2.8	17	0.6	-6.1	-2.8
2	-5.0	-10.6	-7.8	18	-1.7	-8.9	-5.0
3	-5.6	-11.1	-8.3	19	-1.7	-4.4	-2.8
4	-5.0	-7.8	-6.1	20	1.1	-3.3	-1.1
5	-7.2	-13.3	-10.0	21	0.6	-1.7	-0.6
6	-12.2	-16.1	-13.9	22	0.0	-7.8	-3.9
7	-5.6	-13.3	-9.4	23	-7.8	-12.2	-10.0
8	-6.1	-8.3	-7.2	24	-7.8	-12.2	-10.0
9	-4.4	-7.8	-6.1	25	-1.7	-11.1	-6.1
10	0.0	-6.1	-2.8	26	0.0	-8.3	-3.9
11	-0.6	-4.4	-2.2	27	0.0	-10.0	-5.0
12	-3.9	-8.3	-6.1	28	0.0	-6.1	-2.8
13	-3.3	-11.7	-7.2	29	0.0	-8.3	-3.9
14	-7.2	-15.0	-11.1	30	-2.2	-8.9	-5.6
15	-6.1	-14.4	-10.0	31	-1.7	-8.3	-5.0
16	0.6	-6.1	-2.8				

AUGUST

DATE	MAX	MIN	MEAN	DATE	MAX	MIN	MEAN
1	0.0	-3.3	-1.7	17	-4.4	-11.7	-7.8
2	0.0	-1.1	-0.6	18	-11.7	-14.4	-12.8
3	0.0	-0.6	0.0	19	-1.1	-12.2	-6.7
4	1.1	-2.2	-0.6	20	-0.6	-7.2	-1.7
5	-1.7	-5.6	-3.3	21	-0.6	-1.7	-1.1
6	-1.1	-4.4	-2.8	22	0.0	-3.9	-1.7
7	-1.1	-5.0	-2.8	23	-3.9	-18.3	-11.1
8	-2.8	-10.0	-6.1	24	-12.8	-17.8	-15.0
9	-8.9	-10.6	-9.4	25	-10.0	-15.0	-12.2
10	-7.2	-10.6	-8.9	26	-4.4	-12.2	-8.3
11	-8.9	-13.3	-11.1	27	2.2	-6.7	-2.2
12	-9.4	-13.9	-11.7	28	2.2	-5.6	-1.7
13	-3.9	-12.2	-7.8	29	-1.7	-6.1	-3.9
14	-4.4	-8.9	-6.7	30	-2.2	-10.0	-6.1
15	-3.9	-8.3	-6.1	31	-2.2	-10.0	-6.1
16	-3.9	-6.1	-5.0				

YEAR 1967

SEPTEMBER

DATE	MAX	MIN	MEAN	DATE	MAX	MIN	MEAN
1	0.0	-2.8	-1.1	16	-3.9	-6.7	-5.0
2	-1.1	-3.9	-2.2	17	-2.8	-15.0	-8.9
3	-3.3	-8.3	-5.6	18	-15.0	-21.1	-17.8
4	-3.9	-8.3	-6.1	19	-13.3	-19.4	-16.7
5	-8.3	-11.7	-10.0	20	-1.1	-16.7	-8.9
6	-10.0	-16.1	-12.8	21	1.1	-1.1	0.0
7	-12.8	-18.3	-15.6	22	0.6	-2.2	-0.6
8	-8.3	-18.3	-13.3	23	0.0	-3.3	-1.7
9	-2.2	-8.3	-5.0	24	-1.1	-6.7	-3.9
10	2.2	-2.8	0.0	25	-2.2	-6.7	-4.4
11	2.8	-0.6	1.1	26	1.1	-3.3	-1.1
12	1.1	-2.2	0.6	27	-0.6	-11.1	-5.6
13	-2.2	-10.0	-5.6	28	-1.1	-13.3	-7.2
14	-2.2	-9.4	-5.6	29	-1.1	-17.2	-8.9
15	-2.2	-7.8	-5.0	30	-0.6	-15.6	-7.8

OCTOBER

DATE	MAX	MIN	MEAN	DATE	MAX	MIN	MEAN
1	0.0	-3.3	-1.7	17	0.6	-3.3	-1.1
2	-2.2	-14.4	-8.3	18	2.8	-3.9	-0.6
3	-3.3	-11.7	-7.2	19	3.9	-3.3	0.6
4	-5.0	-15.0	-10.0	20	2.2	-2.8	0.0
5	0.0	-15.6	-7.8	21	-0.6	-2.8	-1.7
6	-11.7	-18.9	-15.0	22	-1.1	-3.9	-2.2
7	-2.8	-17.2	-10.0	23	-1.1	-10.6	-5.6
8	-1.1	-5.6	-3.3	24	-2.2	-13.3	-7.8
9	0.0	-10.0	-5.0	25	-6.7	-11.7	-8.9
10	0.6	-6.7	-2.8	26	-3.9	-13.9	-8.9
11	0.0	-10.0	-5.0	27	-1.1	-10.0	-5.6
12	-1.1	-9.4	-5.0	28	0.6	-5.6	-2.2
13	-1.1	-11.1	-6.1	29	2.2	-6.7	-2.2
14	1.1	-4.4	-1.7	30	3.3	-5.0	-0.6
15	1.1	-7.8	-3.3	31	1.1	-6.7	-2.8
16	-3.3	-12.8	-7.8				

YEAR 1967

NOVEMBER

DATE	MAX	MIN	MEAN	DATE	MAX	MIN	MEAN
1	3.3	-1.1	1.1	16	-2.2	-7.8	-5.0
2	0.0	-1.7	-0.6	17	-2.2	-7.2	-4.4
3	3.9	-3.3	0.6	18	-2.8	-8.9	-5.6
4	-0.6	-2.8	-1.7	19	0.6	-8.3	-3.9
5	0.6	-2.2	-0.6	20	5.0	-2.8	1.1
6	-1.1	-6.1	-3.3	21	4.4	1.1	2.8
7	2.2	-2.8	0.0	22	3.3	1.1	2.2
8	0.6	-6.7	-2.8	23	2.2	-1.1	0.6
9	3.3	-1.1	1.1	24	2.2	-1.1	0.6
10	1.1	-3.9	-1.1	25	2.2	-1.1	0.6
11	2.8	-6.1	-1.7	26	2.2	-1.7	0.6
12	-2.2	-6.1	-3.9	27	3.9	0.0	2.2
13	-2.2	-7.8	-5.0	28	2.2	-2.2	0.0
14	-2.2	-9.4	-5.6	29	1.1	-2.8	-0.6
15	-1.7	-8.9	-5.0	30	3.9	-5.0	-0.6

DECEMBER

DATE	MAX	MIN	MEAN	DATE	MAX	MIN	MEAN
1	4.4	-3.3	0.6	17	2.2	-1.1	0.6
2	4.4	-4.4	0.0	18	3.3	0.6	2.2
3	-2.8	-4.4	-3.3	19	7.2	0.6	3.9
4	2.2	-4.4	-1.1	20	5.6	0.6	3.3
5	1.1	-1.7	0.0	21	3.3	0.0	1.7
6	2.8	-2.2	0.6	22	3.3	0.0	1.7
7	3.3	-2.8	0.6	23	6.1	0.0	3.3
8	3.9	-2.8	0.6	24	4.4	1.1	2.8
9	2.2	-1.1	0.6	25	4.4	1.1	2.8
10	3.3	-1.1	1.1	26	5.6	0.0	2.8
11	7.2	-2.2	2.8	27	3.9	1.1	2.8
12	5.0	-0.6	2.2	28	3.9	0.0	2.2
13	4.4	0.0	2.2	29	3.3	-1.1	1.1
14	3.3	0.0	1.7	30	1.1	-1.7	0.0
15	3.9	-1.7	1.1	31	1.1	-1.7	0.6
16	1.7	-2.2	0.0				

PRESSURE

BAROMETRIC PRESSURE (P) (in mb)

YEAR 1967

	JANUARY (P)	DAY	FEBRUARY (P)	DAY	MARCH (P)	DAY	APRIL (P)	DAY
MAX	1014.9	16	1002.7	18	1016.1	12	996.3	11
AVG	998.6		987.7		981.7		981.2	
MIN	978.0	23	967,5	20	953.6	24	964.4	29

	MAY (P)	DAY	JUNE (P)	DAY	JULY (P)	DAY	AUGUST (P)	DAY
MAX	1012.7	29	1012.7	1	1008.6	16	1022.9	25
AVG	987.4		992.2		987.8		993.2	
MIN	963.8	7	971.2	15	960.5	28	943.4	4

	SEPTEMBER (P)	DAY	OCTOBER (P)	DAY	NOVEMBER (P)	DAY	DECEMBER (P)	DAY
MAX	1013.4	8	1014.0	16	1001.0	7	1000.3	7
AVG	985.0		988.0		979.4		989.1	
MIN	954.3	24	955.5	30	963.8	21	971.4	5

FREQUENCY OF MEAN DAILY PRESSURE
(by 10 mb)

(P)	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1020-1029								1				
1010-1019	4		3	2	2	1		5	2	1		
1000-1009	8	2	1	3	2	7	6	4	4	6	1	
990- 999	18	10	4	6	8	7	9	11	3	7	3	14
980- 989	1	10	7	8	8	9	7	3	10	6	8	15
970- 979		5	8	10	10	6	6	5	7	8	13	2
960- 969		1	3	1	1		3	1	2	3	5	
950- 959			3						2			
940- 949								1				
TOTAL OBS	31	28	29	30	31	30	31	31	30	31	30	31

CLOUD COVER

OCCURRENCE OF AVERAGE DAILY CLOUD AMOUNT

YEAR 1967

SCALE BY 1/10	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
0	5	1	0	0	3	3	3	5	0	0	2	5
1-9	5	7	6	6	7	2	6	9	3	9	2	7
10	21	20	25	24	21	25	22	17	27	22	26	19

PRECIPITATION AND FOG

NUMBER OF DAYS WITH RAIN AND DRIZZLE/FREEZING RAIN AND DRIZZLE

JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
8	2	4	6	4	7	5	11	13	7	7	13

NUMBER OF DAYS WITH SNOW AND SLEET

JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
8	10	12	21	22	25	26	21	24	28	22	17

NUMBER OF DAYS WITH FOG AND ICE FOG

JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
13	8	12	3	5	6	10	9	13	12	16	13

TOTAL MONTHLY PRECIPITATION (cm)

JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
-	-	4.7	1.9	4.0	5.8	1.7	3.9	1.7	3.6	1.4	1.8

Annual Total: 30.5

WIND

MEAN MONTHLY WIND SPEED

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	AVG
Kts	3.2	6.0	9.9	10.0	8.5	8.9	8.7	8.5	10.7	8.1	8.7	5.3	8.0
M/s	1.6	3.1	5.0	5.1	4.3	4.6	4.4	4.3	5.4	4.1	4.4	2.7	4.1

OBSERVED VALUES OF MAXIMUM, MINIMUM AND MEAN
DAILY AIR TEMPERATURE (°C)

(300 m Elevation)

YEAR 1967

APRIL

DATE	MAX	MIN	MEAN	DATE	MAX	MIN	MEAN
1	-3.3	-11.1	-7.2	16	-2.2	-3.3	-2.8
2	-5.0	-14.4	-9.4	17	-1.7	-3.3	-2.2
3	-5.6	-13.9	-9.4	18	-1.7	-3.3	-2.2
4	-5.6	-6.7	-6.1	19	-2.2	-4.4	-3.3
5	-6.7	-8.3	-7.2	20	-3.3	-7.2	-5.0
6	-6.7	-13.3	-10.0	21	-5.0	-8.3	-6.7
7	-2.8	-8.3	-5.6	22	-6.7	-13.9	-10.0
8	-1.7	-4.4	-3.3	23	-7.2	-16.1	-11.7
9	-2.8	-5.6	-3.9	24	-3.9	-13.9	-8.9
10	-2.2	-3.3	-2.8	25	-2.2	-13.9	-7.8
11	-2.8	-11.1	-6.7	26	-2.8	-3.9	-3.3
12	-1.1	-6.7	-3.9	27	-3.9	-5.6	-4.4
13	0.6	-1.1	0.0	28	-1.7	-5.0	-3.3
14	1.1	-2.8	-0.6	29	-0.6	-5.0	-2.8
15	-1.1	-3.3	-2.2	30	-0.6	-3.3	-1.7

MAY

DATE	MAX	MIN	MEAN	DATE	MAX	MIN	MEAN
1	0.0	-4.4	-2.2	17	-7.2	-13.9	-10.6
2	-5.6	-9.4	-7.2	18	-8.9	-12.2	-10.6
3	-7.8	-15.6	-11.7	19	-9.4	-14.4	-11.7
4	-6.1	-15.6	-10.6	20	-11.7	-18.9	-15.0
5	-4.4	-7.8	-6.1	21	-7.8	-15.0	-11.1
6	-1.1	-4.4	-2.8	22	-6.1	-13.9	-10.0
7	-3.3	-10.0	-6.7	23	-6.7	-14.4	-10.6
8	-3.3	-11.7	-7.2	24	-10.0	-17.2	-13.3
9	-2.8	-5.6	-3.9	25	-11.7	-15.6	-13.3
10	-5.6	-8.3	-6.7	26	-12.2	-15.6	-13.9
11	-7.2	-17.8	-12.8	27	-15.6	-20.6	-18.3
12	-17.2	-21.7	-19.4	28	-16.1	-22.2	-19.4
13	-15.6	-22.2	-18.9	29	-16.1	-21.1	-18.9
14	-3.3	-17.8	-10.6	30	-5.6	-18.3	-11.7
15	-2.2	-3.3	-2.8	31	-5.6	-8.9	-7.2
16	-2.2	-8.3	-5.0				

YEAR 1967

JUNE

DATE	MAX	MIN	MEAN	DATE	MAX	MIN	MEAN
1	-5.6	-10.6	-7.8	16	-9.4	-11.7	-10.6
2	-2.2	-9.4	-5.6	17	-11.7	-20.0	-15.6
3	-2.8	-5.0	-3.9	18	-3.9	-23.3	-13.3
4	-3.3	-7.8	-5.6	19	-3.9	-5.0	-4.4
5	-7.2	-13.9	-10.6	20	-5.6	-9.4	-7.2
6	-10.6	-20.6	-15.6	21	-1.7	-5.6	-3.3
7	-12.8	-21.1	-16.7	22	-	-	-
8	-12.2	-21.1	-16.7	23	-	-	-
9	-13.3	-23.3	-18.3	24	-	-	-
10	-11.1	-16.1	-13.3	25	-	-	-
11	-4.4	-11.1	-7.8	26	-	-	-
12	-3.3	-5.6	-4.4	27	-	-	-
13	-3.3	-18.3	-10.6	28	-8.9	-15.6	-12.2
14	-16.1	-21.7	-18.9	29	-	-	-
15	-9.4	-17.2	-13.3	30	-	-	-

JULY

DATE	MAX	MIN	MEAN	DATE	MAX	MIN	MEAN
1	-	-	-	17	-3.3	-10.0	-6.7
2	-	-	-	18	-4.4	-15.6	-10.0
3	-	-	-	19	-4.4	-8.9	-6.7
4	-	-	-	20	-2.8	-6.7	-4.4
5	-	-	-	21	-3.9	-6.1	-5.0
6	-	-	-	22	-4.4	-10.0	-7.2
7	-	-	-	23	-8.9	-17.8	-13.3
8	-	-	-	24	-11.1	-18.9	-15.0
9	-	-	-	25	-6.1	-16.1	-11.1
10	-2.2	-3.3	-2.8	26	-5.6	-13.9	-9.4
11	-1.7	-7.8	-4.4	27	-3.9	-15.0	-9.4
12	-6.7	-16.7	-11.7	28	-3.9	-11.1	-7.2
13	-8.3	-24.4	-16.1	29	-4.4	-11.1	-7.8
14	-11.7	-22.2	-16.7	30	-5.6	-12.2	-8.9
15	-5.6	-16.7	-12.2	31	-6.1	-15.0	-10.6
16	-2.8	-5.6	-3.9				

YEAR 1967

AUGUST

DATE	MAX	MIN	MEAN	DATE	MAX	MIN	MEAN
1	-2.8	-7.8	-5.5	17	-8.3	-17.2	-12.8
2	-3.3	-10.0	-6.7	18	-	-	-
3	-3.3	-5.0	-3.9	19	-	-	-
4	-2.2	-5.6	-3.9	20	-	-	-
5	-5.6	-8.9	-7.2	21	-	-	-
6	-	-	-	22	-	-	-
7	-	-	-	23	-3.3	-23.3	-13.3
8	-7.8	-17.8	-12.8	24	-15.6	-21.7	-18.9
9	-13.9	-20.0	-16.7	25	-12.2	-18.3	-15.0
10	-11.7	-18.9	-15.0	26	-9.4	-15.6	-12.2
11	-	-	-	27	-0.6	-14.4	-7.2
12	-6.7	-23.3	-15.0	28	-0.6	-11.1	-5.6
13	-	-	-	29	-2.8	-10.6	-6.7
14	-10.0	-16.1	-12.8	30	-4.4	-14.4	-9.4
15	-5.5	-12.2	-8.3	31	-3.3	-13.9	-8.3
16	-7.2	-14.4	-10.6				

SEPTEMBER

DATE	MAX	MIN	MEAN	DATE	MAX	MIN	MEAN
1	-2.8	-6.1	-4.4	16	-6.7	-9.4	-7.8
2	-5.0	-8.9	-6.7	17	-6.1	-	-
3	-7.2	-13.9	-10.6	18	-21.1	-23.3	-22.2
4	-7.2	-11.7	-9.4	19	-16.7	-26.7	-21.7
5	-11.1	-14.4	-12.8	20	-5.0	-20.6	-12.8
6	-13.3	-17.8	-15.6	21	-	-	-
7	-17.2	-25.0	-20.6	22	-5.0	-7.2	-6.1
8	-10.0	-25.0	-17.2	23	-3.9	-8.3	-6.1
9	-2.2	-11.1	-6.7	24	-5.0	-11.7	-8.3
10	-0.6	-5.0	-2.8	25	-5.6	-15.0	-10.0
11	-0.6	-3.3	-1.7	26	-3.3	-6.7	-5.0
12	-1.1	-4.4	-2.8	27	-3.9	-14.4	-8.9
13	-4.4	-17.2	-10.6	28	-5.0	-18.9	-11.7
14	-7.2	-16.1	-11.7	29	-5.0	-	-
15	-5.6	-15.6	-10.6	30	-	-	-

YEAR 1967

OCTOBER

DATE	MAX	MIN	MEAN	DATE	MAX	MIN	MEAN
1	-2.2	-7.8	-5.0	17	-1.7	-5.0	-3.3
2	-6.1	-21.1	-13.3	18	0.0	-	-
3	-8.3	-18.9	-13.3	19	0.6	-1.1	0.0
4	-8.9	-18.9	-13.9	20	0.0	-1.7	-0.6
5	-5.0	-22.8	-13.9	21	-1.7	-2.8	-2.2
6	-12.8	-27.8	-20.6	22	-3.3	-7.8	-5.6
7	-8.9	-24.4	-16.7	23	-3.3	-12.2	-7.8
8	-7.8	-10.0	-8.9	24	-3.3	-16.7	-10.0
9	-2.8	-12.8	-7.8	25	-9.4	-13.9	-11.7
10	-1.1	-9.4	-5.0	26	-7.8	-17.8	-12.8
11	-2.2	-15.0	-8.3	27	0.0	-12.2	-6.1
12	-6.7	-11.7	-8.9	28	0.0	-6.1	-2.8
13	-2.2	-12.8	-7.2	29	-0.6	-7.8	-3.9
14	0.0	-5.6	-2.8	30	2.2	-5.6	-1.7
15	-1.1	-	-	31	-0.6	-6.7	-3.3
16	-5.0	-	-				

NOVEMBER

DATE	MAX	MIN	MEAN	DATE	MAX	MIN	MEAN
1	1.1	-2.8	-0.6	16	-2.8	-10.6	-6.7
2	-2.2	-5.0	-3.3	17	-3.9	-10.6	-7.2
3	0.0	-3.3	-1.7	18	-7.8	-15.6	-11.7
4	-2.2	-5.0	-3.3	19	-1.1	-15.0	-7.8
5	-2.2	-4.4	-3.3	20	1.7	-2.2	0.0
6	-3.3	-9.4	-6.1	21	1.1	-0.6	0.6
7	-3.3	-13.3	-8.3	22	0.6	-7.2	-3.3
8	-0.6	-8.9	-4.4	23	0.6	-7.8	-3.3
9	1.7	-3.3	-0.6	24	-0.6	-2.8	-1.7
10	-1.7	-8.3	-5.0	25	-0.6	-3.9	-2.2
11	-1.1	-8.3	-4.4	26	-0.6	-3.9	-2.2
12	-5.6	-8.9	-7.2	27	1.1	-1.7	0.0
13	-6.1	-10.6	-8.3	28	0.0	-5.0	-2.2
14	-4.4	-12.8	-8.3	29	-2.2	-5.6	-3.9
15	-5.6	-13.3	-9.4	30	0.6	-8.9	-3.9

YEAR 1967

DECEMBER

DATE	MAX	MIN	MEAN	DATE	MAX	MIN	MEAN
1	1.7	-8.3	-3.3	17	-0.6	-3.9	-2.2
2	1.7	-9.4	-3.9	18	2.8	-3.3	0.0
3	-5.0	-9.4	-7.2	19	5.0	-0.6	2.2
4	-1.1	-6.7	-3.9	20	4.4	-0.6	2.2
5	-0.6	-3.3	-2.2	21	2.2	-1.7	0.6
6	1.1	-4.4	-1.7	22	3.3	-2.2	0.6
7	-1.1	-5.0	-2.8	23	3.9	-1.1	1.7
8	-	-	-	24	3.9	0.6	2.2
9	0.0	-2.8	-1.1	25	5.6	-2.8	1.7
10	1.1	-2.8	-0.6	26	7.2	-3.3	2.2
11	2.8	-3.9	-0.6	27	4.4	-1.7	1.7
12	3.3	-2.2	0.6	28	1.7	-2.2	0.0
13	1.7	-1.1	0.6	29	7.2	-3.3	2.2
14	3.3	-0.6	1.7	30	-0.6	-4.4	-2.2
15	0.6	-6.1	-2.8	31	2.2	-4.4	-1.1
16	-1.7	-6.7	-3.9				